

Member Associated Business
Papers, Inc.The Newspaper
of the IndustryMember Audit Bureau
of Circulations.AIR CONDITIONING AND
REFRIGERATION News
 21 1946
 Issued Every Monday at
 450 W. Fort St., Detroit 26, Mich.
DETROIT
December 30,
1946
 Vol. 49, No. 18, Serial No. 928
 Established 1926.

Reentered as second-class matter October 3, 1936 at the post office at Detroit, Michigan, under the Act of March 3, 1879. Trade Mark Registered U. S. Patent Office. Copyright, 1946, by Business News Publishing Co.

INSIDE DOPE

by GEORGE F. TAUBENECK

 Story of the Week
 Revising the Wagner Act
 Disregard of Law
 Free Advertisement
Story of the Week

Chicago newspapermen are laughing over the following yarn brought back from Moscow by a foreign correspondent:

Like most European nations which prepare for war in times of peace, Russia is encouraging the production of large families. Bonuses and honors for mothers are the order of the day.

One remarkable Russian mother recently became a national heroine. Giant-size pictures of this woman were shown everywhere in Russia.

The foreign correspondent for the Chicago newspaper was intrigued by these pictures. He learned that she had borne 24 children, and he sensed that there was quite a story in that feat. So he asked for permission to interview her.

"Sorry," replied the Soviet official in charge of permissions-to-interview. "You can't see her. She's in a Siberian labor camp now."

"For heaven's sake, why?" demanded the amazed correspondent.

"She murdered her husband."

Revising the Wagner Act

Now that extensive revisions of the nation's labor law structure seem to be assured, many interesting suggestions are being made. In a recent editorial, the NEWS proposed nine changes in the Wagner Act. This prompted Irving Alter of Chicago to write:

"Many thanks for your editorial of Dec. 9. I have enjoyed it as I have many of your other editorials. I think that you have omitted two very important suggestions from your list of mine and I think that you should include these in any suggestions for legislation:

"No. 10: Portal to Portal Pay. Pay should be primarily based on production. Some sensible modification of the portal to portal demands must be made. With very little exaggeration union men will be demanding home to home pay, or if you must exaggerate, bed to bed.

"No. 11: Featherbedding. The only thing wrong with the so-called Petrillo Act was that the legislators did not have the courage of their convictions. The featherbedding in the musicians' union was carried to such an extreme that they were forced to take some action. Instead of regulating all labor they confined it to regulating Petrillo, and of course, the Supreme Court threw it out as being unconstitutional. We still need the legislation but need it for universal application.

"In my humble opinion these are equally as important as the very important nine points that you made."

Mr. Alter's points are well taken. So are the following:

(1) Provision for court review of N.L.R.B. decisions for a wider range of reasons than will now permit such action; (2) Giving the employer the right to petition the N.L.R.B. for an election at which employees may select a bargaining agent; (3) Providing a reasonable definition of collective bargaining (the N.L.R.B. now holds that an employer is not bargaining in good faith unless he continually makes "counter-offers" to union demands, whereas a refusal to offer any improvements in conditions is a legitimate position in bargaining); (4) The word "employee" should be defined to exclude persons who have been out on strike for a considerable period, so that an election may be held without allowing these

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Winter Marts Seen Drawing Record Crowds

Nation's Appliance Buyers
Await View of '47 Models
At Chicago Marts Jan. 6-18

CHICAGO—Thousands of appliance and homefurnishings buyers from all over the nation will start pouring into Chicago this week-end to get in line for a look at the new models and patterns to be exhibited during the 1947 winter markets.

The markets will be staged Jan. 6 to 18 at the American Furniture Mart and at the Merchandise Mart.

Record crowds are predicted by officials of both marts. More than 20,000 are expected to view manufacturers' and distributors' exhibits at the American Furniture Mart, while an earlier report from the Merchandise Mart announced in excess of 40,000 would be on hand for the International Homefurnishings Market.

Hotel reservations for the first week were reported exhausted since October. But one source said there were indications that the pressure would let up for the second week.

Practically every major appliance line will be represented at the American Furniture Mart, along with principal displays of furniture and housewares, according to officials. Tenants include 12 manufacturers of refrigerators, 15 freezer producers, 23 makers of washers, and 42 stove manufacturers.

Buyers have been promised views of many new models and patterns.

"Scattered showings of new designs appeared during the 1946 Markets," said a Furniture Mart official, "but the first real influx of

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Sears Catalog Drops Home Freezer Listing

DETROIT—Home freezers, listed in Sears Roebuck's last two catalogs, have finally been dropped. In the store's latest 268-page mid-winter book now being circulated, home freezers are among the many major appliances missing.

In a supplementary "flyer" to the mid-winter catalog Sears listed washing machines, electric and gasoline operated. Even these, store officials stated, are not available at local stores, but must be ordered individually direct from the Chicago headquarters at prices up to \$94.95.

On many of its pages, however, the catalog tells customers that "low 1946 prices are still in effect and will be until Feb. 28, 1947, after which Sears cannot guarantee shipments at mid-winter catalog prices."

Philip Pugh to Manage Crosley Range Sales

CINCINNATI—Philip W. Pugh's appointment as manager, range sales, of the Crosley Division, Aviation Corp., was announced by S. D. Mahan, general sales manager. His headquarters will be at Cincinnati.

Mr. Pugh has been affiliated with Crosley as promotional manager of the central region since November, 1945. During the war he was in the aircraft radio division of the U. S. Signal Corps, stationed at Wright Field.

For 14 years prior to the war, Mr. Pugh was with the Westinghouse Supply Co. and independent distributors in various merchandising capacities.

Heads Engineers

R. H. MONEY

Refrigeration advisor to the Reynolds Metals Co., he has been elected president of the American Society of Refrigerating Engineers.

Kinetic Statement on 'Freon' Clarified

WILMINGTON, Del.—In connection with the shortage of "Freon," the following announcement has been received from W. W. Rhodes, sales director of Kinetic Chemicals, Inc., producer of the refrigerant:

"In the Oct. 21 issue of AIR CONDITIONING & REFRIGERATION NEWS you quoted from a communication of Kinetic Chemicals, Inc. and as a result of the article, a group of wholesalers of refrigerants and supplies feel that there is some implication that Kinetic Chemicals, Inc. alleges that they have been engaged in black market operations.

"Careful reading of the article would disclose that no such allegation was made nor intended.

"However, Kinetic Chemicals, Inc. is extremely sorry that this construction was placed on the article and wishes to express complete confidence in the integrity of the wholesalers of refrigerants and supplies. If there was any black market in 'Freon-12' we feel sure that the wholesalers did not contribute to this black market, and if they had knowledge of it would have made every effort to stop it. As far as we know, national distributors, wholesalers, and service men have conducted themselves in an ethical manner," concludes Mr. Rhodes.

Frozen Food Packers Cautioned on Plans

BUFFALO—Caution against over-expansion in the frozen foods industry in the coming year was urged by Lawrence S. Martin, secretary-manager of the National Association of Frozen Food Packers, in an address before the sixty-first annual convention of the New York State Canners, Inc. in Hotel Statler here.

More than 700 representatives of canning, freezing, and associated supply companies attended.

"It is my opinion," Mr. Martin said, "that packers of frozen fruits and vegetables and all processors who may be contemplating freezing operations next year should take a long, hard, and sober look at the present situation and the outlook for 1947 before making commitments for the coming production season."

(Concluded on Back Page, Column 3)

Appliance Industry Hopeful of Good Year, But Sees Problems

Higher Wages-Same Prices
'Absurd, Ridiculous,'
Say Price & Wilson

DETROIT—"Absurd" and "ridiculous" were the adjectives used by the heads of the nation's two largest electric companies to describe labor's latest requests for higher wages without an increase in prices.

Gwilym A. Price, president of Westinghouse Electric Corp., pointed out that though total corporation profits in 1946 will be large compared with any peacetime year since 1929, Westinghouse is facing a loss of \$50,000,000 for the year, even with the carry back provisions of the wartime tax laws.

"The striking contrasts between large total profits of all corporations and the small profits of some individual corporations again point up the absurdity of the argument for higher individual company wages based on total corporation profits," Mr. Price declared.

Charles E. Wilson, G-E president stated in a press conference that it is ridiculous to expect further wage increases can be paid without raising prices.

He proposed a truce on additional wage rises for a year so that technological advances made during the war could work to lower prices for the consumer.

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'Rebuilt' Appliance Advertising Attacked

CLEVELAND—A nine-point agreement, designed to end misleading and fraudulent advertising allegedly used by some firms for rebuilt major home appliances including vacuum cleaners, has been adopted by the Cleveland Better Business Bureau, the local daily papers, and the Cleveland Shopping News, it was announced here.

The points of the agreement are:

1. No false or misleading copy, layout or cuts shall be used in used and rebuilt major home appliance advertising.

2. When any used, reconditioned, or rebuilt appliance is advertised as having been "reconditioned," "reconstructed," or "rebuilt," the exact degree of reconditioning or rebuilding shall be specified. There shall be neither statements nor implications that the new parts have been produced by the original manufacturer of the appliance unless such is the fact.

3. If an appliance is advertised as "rebuilt," the rebuilding firm shall be named.

4. The word "new" or such phrases as "like new," "works like new," or "rebuilt like new," shall not be used in advertising any used and rebuilt appliance, regardless of the degree of rebuilding.

5. The model number and year of manufacture of used and rebuilt ap-

(Concluded on Back Page, Column 3)

Auto Accident Kills Kold-Hold Executive

LANSING, Mich.—Fred E. Heidrich, assistant treasurer of the Kold-Hold Mfg. Co. here, and his wife were killed recently in an automobile accident near Cordelle, Ga. They were enroute to Florida.

Before joining the Kold-Hold organization, Mr. Heidrich served as treasurer of the Libby-Owen Glass Co., and was connected with the Hill-Diesel Co.

Sales Expected to Climb,
But New Wage Demands,
Materials May Hold Key

DETROIT—A prosperous 1947 lies ahead for the appliance industry, all elements of that industry seem to feel at year's end.

With one eye on the prospect of rising sales at more profitable prices, industry leaders keep the other cocked warily on several question marks, namely, the end of the seller's market, union wage demands, and materials shortages.

There seems to be little doubt in anyone's mind but what appliance sales will continue to climb, at least in the early months of 1947.

The National Retail Furniture Association has announced that it expects sales of major and traffic appliances to account for 15 to 35% of the total volume in independent furniture stores in 1947. This estimate compares with 3 to 5% during 1944-45 and 17 to 24% in 1940.

Two hundred stores named electrical appliances among the departments most likely to show sales increases during the first four months of 1947 in a survey conducted by Kirby, Block & Co., resident buyers in New York City.

Retailers throughout the country at year's end reported no slackening in the demand for major appliances though the supplies received were increasing. Only vacuum cleaners seem to be on the brink of the buyer's market. Some stores say they have to "sell" vacuum cleaners now.

Solid evidence of the sustained public demand for major appliances was demonstrated in Western Auto Stores in Oklahoma City and El Paso, Tex.

In Oklahoma City, the store sold its entire stock of 78 Wizard refrigerators, priced at \$224.50 in one hour's time. Approximately half were sold for cash. The remainder were moved on a one-third down and 12-months-to-pay basis.

At El Paso, 41 out of 54 Wizard refrigerators, at the same price, were sold in one day. The remaining 13 were in customers' hands within two more days. Of these, 23 were sold for cash and 31 were sold on time.

Almost all manufacturers report large backlogs of orders on their books as they enter 1947. For instance, Westinghouse is said to have over \$573,000,000 worth of orders waiting fulfillment. Carrier Corp. says that it sold \$40,000,000 worth of merchandise in 1946 and was able to deliver only \$23,000,000 worth.

Many manufacturers believe that a buyers' market will blossom forth by

(Concluded on Back Page, Column 1)

Weber Purchases West Coast Refrigerator Firm

LOS ANGELES—Purchase of Cal-plasticorp, manufacturer of a plastic portable refrigerator here, has been announced by Weber Showcase & Fixture Co. The purchase was made with 3,162 shares of Weber common stock created under a new recapitalization plan, according to the company.

Under the new plan, Weber's first preferred stockholders were entitled to six new common shares or two new \$1 dividend \$25 par preferred at the holder's option until Dec. 31. After that time, the holders are entitled to common only.

Second preferred holders received five shares of common and warrants to purchase five additional shares for each preferred share now held. Holders of the old common will receive two new common shares for each share held.

GENUINE
MAYFLOWER
AIR CONDITIONERS



Air Conditioners
Licensed Under
U. S. Patents
No. 2,048,246
No. 2,055,528

MAYFLOWER PRODUCTS, INC.
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In the West it's
REFRIGERATION SERVICE INC.
Pacific Coast Supply Jobber
since 1928

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LOS ANGELES 4, CALIF.

SUPERIOR VALVE & FITTINGS COMPANY
Pittsburgh 26, Pennsylvania

VALVES, FITTINGS & ACCESSORIES

For All

- Refrigeration
- and
- Air Conditioning Systems

Restaurant Food Freezing Aids Serving of Meals

CHICAGO—Research and experimental work on the part of both individual restaurateurs and restaurant association groups are striving for the goal of making foods "more palatable and less costly" through the medium of quick-freezing operations.

One restaurant has used quick freezing to obtain "advance" production in his bakery. A week's supply of apple pies is frozen, then used as needed. Rolls, bread, and some pastries are produced in a similar manner. This serves to bring about "mass production" economies, and also cuts waste.

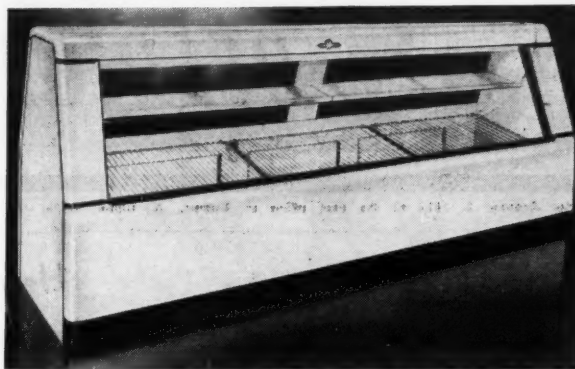
A chain of restaurants in the east is trying out freezing pre-cooked individual meals in moisture-proof bags, which are dipped in boiling water before serving to prepare them.

The Villa Moderne, fashionable eating place just outside of Chicago, has been famous for its quick-freezing activities for some time. It is said to cook all of its dishes in advance, and then store them in a freezing unit. By this process the Villa Moderne is said to be able to open its doors at 11 a.m., and be serving 100 people by noon.

Frozen French-fried potatoes are gaining popularity because they can be produced in greater quantities at lower cost, through this method.

Frozen fruit juices have had a rather bumpy history, but a new concentrated frozen orange juice is said to have attained a high degree of acceptance, with one of New York's best hotels serving it exclusively.

Frigidaire Enters Display Case Field



At right is a 10-ft. model (FX 25-10) of Frigidaire's new line of gravity cooling display and storage cases which are also being turned out on a limited scale in 6 and 8-ft. sizes. Display cases with forced air cooling are likewise being produced in 8 and 10-ft. sizes. Both types of cases have built-in ventilation to prevent fogging, and are insulated with fibrous glass, 3 in. for the gravity cooling models and 4 in. for the forced air.

Taylor, Travis Named V. P.'s of C. B. Strain Co.

POUGHKEEPSIE, N. Y.—William A. Taylor and Sheldon Travis have been elected vice presidents of C. B. Strain & Son, Inc., firm handling General Electric commercial refrigeration and air conditioning products here, according to Chalmers L. Strain, president.

Mr. Taylor will have charge of general sales and merchandising and will retain his position as sales manager, Mr. Strain said. He has been sales manager ever since he joined the firm in 1941. Previously, Mr. Taylor had served in the merchandising field with Delco-Frigidaire division of General Motors in Detroit, Utica, and Albany.

Mr. Travis will have charge of construction operations. He has been with the firm since 1942.

Prior Schooling Helps Syracuse Store's Staff Push Frozen Food Sales

SYRACUSE, N. Y.—When Dey Bros., a leading Syracuse store, began over-the-counter frozen food sales last month, its selling and promotional staff is reported to have scored 100% in answering customer questions—technical or general.

As a member of the Frozen Food Foundation, whose headquarters also are in Syracuse, Dey's personnel received advance schooling in frozen food essentials in the Foundation's research kitchen.

Mrs. Ruth Seaton Hicks, in charge of the Foundation's training programs, gave the Dey Bros. employees facts on frozen food development and production methods and drilled them in demonstration and selling techniques. Home preparation hints, frozen food recipes, and menus were reviewed. All trainees then actually prepared a variety of frozen food dishes in order to advise customers with authority.

Finally, they watched Mrs. Hicks get together a complete meal—from frozen soup to frozen dessert—in less than 45 minutes.

Dey's decision to establish an over-the-counter frozen food department follows a year's successful experience with a frozen food home delivery service, operated from off-store facilities.

This pioneering venture of Dey's has led to initiation of frozen food activities in other major parts of the Allied Stores group, such as Jordan Marsh, Boston; Bon Marche, Seattle; Rollman's, Cincinnati; Morehouse-Martens, Columbus, Ohio; and Gertz, Jamaica, N. Y.

Like Dey's, these and other Allied units getting ready to start frozen food sales are all Frozen Food Foundation members.

Dey's over-the-counter department under direct supervision of C. M. Cook, food buyer, covers about 150 sq. ft. of store space, uses five Weber self-service frozen food cabinets, and is staffed by five persons.

The Frozen Food Foundation, with membership limited to one store per city, is a non-profit research and service organization. It was established early in 1945.

Guild Unanimously Adopts Code of Business Ethics

NEW YORK CITY—A code of ethics and rules of business procedure and conduct has been adopted unanimously by the Refrigeration & Air Conditioning Guild here.

It covers price cutting, unfair interference with present customers, complaints, and signed orders.

Text of the code follows:

CODE OF ETHICS AND RULES OF BUSINESS PROCEDURES AS ADOPTED BY THE REFRIGERATION & AIR CONDITIONING GUILD, INC.

I.—The members of the Refrigeration & Air Conditioning Guild, Inc., have adopted the following rules of ethical business dealings as a general guide, however not denying existence of other rules not specifically mentioned.

Sec. 1.—Establishment of fair competitive price practices to insure fair and legitimate profits, permitting the refrigeration contractor to complete his responsibilities to the consumer after the sale.

Sec. 2.—To abstain from the practice of offering free service or cheaper than normal prices for service for the sole purpose of catching an unwary consumer and overcharging him in another item to make up for the free service.

Sec. 3.—The consumer should not be made to pay more than the list price for refrigeration equipment or material plus the actual labor charge per man per hour, whether priced on a time and material basis or on a lump sum basis.

Sec. 4.—The consumer is entitled to full protection in the carrying out of the refrigeration contractor's warranty and guaranty.

II.—UNFAIR INTERFERENCE WITH PRESENT CUSTOMERS

Sec. 1.—Efforts direct or indirect in any way to unfairly encroach upon the business of another refrigeration contractor, are unworthy of a legitimate refrigeration contractor; but nevertheless, it is the right of any contractor to bid in on any job that was presented to him in the normal course of business.

Sec. 2.—A refrigeration contractor should not ignore known customs or practices of the refrigeration industry, without giving his competitor fairly and timely notice.

Sec. 3.—A refrigeration contractor shall not knowingly or willfully by any means whatsoever interfere with any contract now in existence between contractor and customer, for the express purpose of appropriating the business of the contractor.

Sec. 4.—The aspersion of the character of a competitor which questions his business integrity, his credit standing or the ability, quality, or reliability of his service is condemned as an unfair trade practice.

Sec. 5.—No refrigeration contractor shall pirate an employee from another contractor. No refrigeration contractor shall hire an employee of another refrigeration contractor without first notifying the former employer that he is so hiring such employee.

III.—CUSTOMER COMPLAINTS

Sec. 1.—A refrigeration contractor, upon receiving a complaint from a customer, that his competitor has violated any of the principles herein, stated or is dissatisfied with the work performed by the competitor, shall personally contact his competitor to ascertain the truth or untruth of the customer's complaint. The refrigeration contractor shall not use the information received by the customer's complaint unless and until he has personally investigated and ascertained that such complaints are true.

IV.—SIGNED ORDERS

All orders shall be in writing and signed by the customer except in special instances. A refrigeration contractor shall not send a customer to a wholesale jobber or material supplier with an order on his own business card, but shall at all times send a signed written order for such material.

V.—Every customer shall be given a written invoice and bill with labor, material, and tax items separately stated and a guaranty if any agreed upon, shall be completely printed on such bill or invoice.

**AGREEMENT made this 1st day of January between
THE PENN BRASS & COPPER COMPANY and
all our customers**

Witnesseth:
Whereas, the Manufacturer is engaged in the business of drawing the finest quality Copper and Brass tubing and marketing it under the brand name "Superior".
Whereas, the customer is engaged as a wholesaler distributing our products, or as a manufacturer who uses "Superior" tubing in his products.
Now Therefore, because of the many difficulties that both parties have undergone during the critical shortage, Penn will, to the best of its ability, fairly allot and ship substantial amounts of tubing to all customers.
We agree to maintain and constantly improve the quality of our products and increase the production of "Superior" tubing as quickly as possible. Resolved therefore, we will endeavor to ring in the New Year with prompt delivery of "Superior" products.

By Superior
By Superior



**FASTEST FLARING TOOL
YOU EVER USED**

Immediate delivery on the PAPCO #400
Write for latest bulletin today

"Superior" tubing is four ways better for it is seamless, clean and bright, dry, and easy bending. Resolve now to use "Superior" for all your tubing requirements. Write for interesting circular, "After the Pressure is Off."

PENN TUBING IS "SUPERIOR"

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NAT Gas Fired Suspended Unit Heaters

Made in two sizes:

100,000 BTU

150,000 BTU

Shipments within three to four
days after orders are accepted.

THE NAT CORPORATION

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Sold to Heating & Piping Contractors only.

Seeing is believing is selling!



In the illustration above, you see one of the many ways in which Kelvinator helps its dealers build for lasting profits. For here a group of dealers' salesmen are witnessing one of the ten films prepared by Kelvinator as a part of the great Vocation-in-Sales Training Program—films which take the spectator right into Kelvinator's modern plants and show him *how* Kelvinator products are built, explain *why* they are built that way, and relate the specific features of each product—the *selling points*—in terms of customer conveniences.

Through the medium of these films, the salesman or sales trainee views, in highly dramatic form, the fundamentals of selling in general and the techniques of selling Kelvinator products in particular.

A glance at the titles of the ten films in the Vocation-in-Sales Training Program series indicates the scope of the V.I.S. Program—and of the

kind of down-to-earth, retail-minded *Kelvinator* thinking that lies behind it . . .

SELLING FUNDAMENTALS

Here's to Your Future in Sales
How and Why Customers Buy

The Man the Customer Sees
You Can Learn from a Miss

KELVINATOR PRODUCTS

The Extra Values of the Kelvinator Refrigerator

Selling the Kelvinator Refrigerator

The Kelvinator Moist-Master

The Kelvinator Home Freezer

The Extra Values of the Kelvinator Range

Selling the Kelvinator Electric Range

In these films—in the whole V.I.S. Training Program—in Kelvinator's over-all way of doing business—there is evident a wholly retail-minded way of thinking things through . . . a way that reaches from meticulous engineering of *fine* products right on through basic training of *professional* salesmen to farsighted planning for *lasting* profits . . . a way that makes the Kelvinator Franchise . . .

*The most Valuable
Franchise in the
Appliance Industry*



Price, C. E. Wilson-- York Corp. Earnings Rise

Despite Sales Losses

(Concluded from Page 1, Column 4)

"Very much depends on maintaining the status quo in prices and wages," he averred. "It is not fair to the 140,000,000 people of this country to ask them to accept higher prices."

Commenting on Mr. Wilson's request for a moratorium on wage demands, James B. Carey, secretary-treasurer of the C.I.O. asserted, "A no-strike pledge or its equivalent is just what a collective bargaining agreement provides. A decision on industrial peace rests with management. They negotiate the contracts."

Robert J. Watt, international representative of the A.F.L. declared, "In order to maintain the real value of the earned dollar, prices would have to be lowered, and there seems to be no reference by Mr. Wilson to the present profit levels."

"His proposal would be entirely unfair to that large segment of our population, 47% of the American families who earn less than \$2,000 a year."

While the verbal battle raged, Chase Brass & Copper Co. faced a \$20,000,000 portal to portal pay suit brought against it by the Independent International Association of Machinists at Cleveland. The company's C.I.O. organized brass workers in Waterbury, Conn. are said to be planning a \$1,000,000 portal to portal pay suit.

A \$600,000 "portal" suit has also been filed against the Elwell-Parker Electric Co. of Cleveland by 400 employees of the C.I.O.-United Electrical Workers Union.

YORK, Pa.—Despite a \$6,000,000 loss in net sales over the previous year, the York Corp. here has announced that its net earnings increased to \$1,279,469 for the fiscal year ending Sept. 30, 1946, from \$949,718 during the preceding fiscal year.

The 1946 figure includes a return to income of reserves for wartime contingencies amounting to \$253,004, the company said. The net income divides into \$1.37 per share this year as compared to \$1.02 per share last year.

York explained the sales shrinkage from \$38,365,127 in 1945 to \$32,052,000 in 1946 as the result of inability to maintain steady, balanced production due to short and irregular supply of raw materials and finished components.

Orders booked amounted to \$40,984,828 as compared to \$38,910,985 the previous year, the company said. Unfilled orders, which include contracts normally recorded as orders booked, and for service, accessory equipment, supplies, and merchandise orders from distributors not recorded until shipped, amounted to \$43,030,000. This compares with \$24,267,000 for the previous year, according to the company.

In issuing the report, York said, "The corporation's sales planning and direct and resale organizations are firmly established to meet the buyer's market expected in the near future. Plant development and tooling for new and improved products is progressing satisfactorily, considering the short supply of many items."

A tabulation of figures from the report follows:

	1946	1945	1944
Earned per share	\$1.37	\$1.02	\$.78
Orders booked	40,984,828	38,910,985	41,435,415
*Uncompleted orders	23,429,779	16,017,371	27,139,922
†Net sales	32,052,000	38,365,127	34,106,874
Profit aft. charges	1,934,465	4,340,718	3,265,921
Fed. & state taxes on income	908,000	3,200,000	2,386,083
Prov. for conting.		191,000	150,000
Reserve credit	1253,004		
Net income	1,279,469	949,718	729,838

*After cancellations and price determinations. †Exclusive of billings on contracts less than 85% completed. ‡Reversal of unrequired balance of reserves for contingencies.

Chicago Marts to Draw Record Crowds--

(Concluded from Page 1, Column 2)

postwar patterns will be shown in the coming exhibitions."

According to Wallace O. Ollman, general manager of the Merchandise Mart, new models and patterns "will be comparatively numerous in all branches of home furnishings, though in some cases they will be introduced to indicate a trend, rather than for market business."

It was pointed out that the markets will be the first held since the lifting of Government controls over prices, designs, and materials. The end of OPA came long enough before the markets, it was noted, to give producers an indication of their costs.

The usual array of market meetings will be held during the showings. These will include luncheons, dinners, and cocktail parties given by individual companies and store groups, associations, and institutes.

Among the sessions will be several held by the National Retail Furniture Association. NRFA's program includes three breakfast meetings and the annual dinner Jan. 7 at the Stevens Hotel, plus a board meeting and several sessions for affiliated secretaries, officers, and staff members.

Arthur H. Motley, publisher of *Parade* and nationally known sales authority, will speak at the annual dinner on "The Selling Pattern for Tomorrow," and the 100-voice Paulist Choir will sing. Highlighting the breakfast programs at the Furniture Mart will be talks by Walter Morrow, president of the American Retail Federation, and Dr. Paul Nystrom, president of the Central Council of Retail Associations.

Appliance Exhibitor List

Appliance tenants listed by the two marts include the following:

AMERICAN FURNITURE MART

Refrigerators: Frigidaire, General Electric, Westinghouse, Nash-Kelvinator, Leonard, Norge, Philco, Admiral, Crosley, Gibson, Sanitary, Presteline.

Freezers: Admiral, Amana, Ben Hur, Crosley, Frigid-Freezer, General Electric, Gibson, Kelvinator, Leonard, Norge, Philco, Sanitary, Westinghouse, Frozen Foods.

Washers: A. B. C., Apex, Duchess, Barlow & Selig, Barton, Bendix, Blackstone, Conlon, Crosley, Dexter, Easy, General Electric, Holland-Rieger, Horton, Jacobs, Kitchen Queen, Morton, 1900, Norge, Westinghouse, Norklee, Young, Lektro.

Driers: General Electric, Westinghouse, Hamilton, Bendix, Blackstone, 1900.

Dishwashers: General Electric, Westinghouse, Berger.

Irons: A. B. C., Apex, Barlow & Selig, Bendix, Blackstone, Conlon,

Crosley, Dexter, Easy, General Electric, Holland-Rieger, Horton, Ironrite, Morton, 1900, Sparks-Withington, Westinghouse, Matmatic.

Vacuum Cleaners: Apex, Cadillac, Eureka, Franklin McAllister, General Electric, Hoover, Sweeper-Vac, Premier, Westinghouse, Lewyt.

Disposal Units: General Electric, Westinghouse, Berger.

Cabinets: Crosley, General Electric, Midwest, Westinghouse, Roberts & Mander, Paragon, Presteline, Frigidaire, Nash-Kelvinator, Sellers, Tracy, Elgin, Pally.

Stoves: Tappan, Cribben & Sexton, American, Roper, Roberts & Mander, Estate, Moore, Crown, Caloric, Welbilt, Hardwick, Tennessee, General Electric, Westinghouse, Presteline, Gray & Dudley, Norge, Detroit Vapor, Gibson, Comstock Castle, Athens, Auto, Knox, Premier, Dortch, A. & J., Agricola, United, Dixie, Eagle, Cole, Dearborn Monroe, Frigidaire, United States, Jacobs, Leonard, Locke, Odin, Oakland, Ohio, Siegler, Grand.

Ice Cube Units: Plastray Corp.

Frozen Food Package: Interstate Folding Box.

THE MERCHANDISE MART

Adel Precision Products Co.; Altheimer & Baer, Inc.; Aluminum Goods Mfg. Co.; Aluminum Specialty Co.; American Central Mfg. Corp.; Apex Rotarex Corp.; Artmoore Co.; Associated Projects Co.; Auto City Plating Co.; The Bellaire Enamel Co.; Bersted Mfg. Co.; H. E. Bremer Mfg. Co.

Camfield Mfg. Co.; Casco Products Co.; Chamberlin Co. of America; Colt Mfg. Co.; Columbian Enameling & Stamping Co.; The Coolerator Co.; G. N. Coughlan Co.; Dazey Corp.; Deepfreeze Division, Motor Products Corp.; Detecto Scales, Inc.; Dominion Electric Mfg. Co.; Easy Washing Machine Corp.; Edison General Electric Appliance Co.; The Enterprise Aluminum Co.; Eureka Vacuum Cleaner Division, Eureka-Williams Corp.

S. W. Farber, Inc.; Florence Stove Co.; Free Sewing Machine Co.; Air Conditioning Division, General Electric Co.; General Mills, Inc.; Geuder, Paeschke & Frey; Gold Seal Coffee Brewer; Hartford Prod. Corp.; Hill-Shaw Co.; Hobart Mfg. Co.; International Appliance Corp.

C. S. Keating Associates; Kellogg Brush Mfg. Co.; Kelvinator Division, Nash-Kelvinator Corp.; Kenrod Mfg. Co.; Knapp-Monarch Co.; Kordite Co.; Landers, Frary & Clark; Heater Division, LaSalle Lighting Products, Inc.; Lisk Savory Corp.; Manning, Bowman & Co.; Matt-Matic Home Appliance Corp.; E. J. McAleer & Co.; Toastmaster Prod. Division, McGraw Electric Co.; Menasco Mfg. Co.; The Metal Ware Corp.; W. F. Meyer & Sons, Inc.; Michiana Prod-

ucts Corp.; Mirro Aluminum Co.; Mutschler Bros. Co.

Nash-Kelvinator Sales Corp.; National Enameling & Stamping Co.; Electrical Division, National Enameling & Stamping Co.; National Sewing Machine Co.; New Home Sewing Machine Co.; Nu-Enamel Corp.; NuTone, Inc.; Nye, Walter & Co., Inc.; Peerless Mfg. Corp.; Portable Electric Heater Co.; Presco Co.; The Presco Co.; Proctor Electric Co.

Regina Corp.; Renown Stove Co.; Rome Mfg. Co., Div. Revere Copper & Brass, Inc.; Rival Mfg. Co.; Round Oak Corp.; Samson-United Corp.; D. E. Sanford Co.; Seal-Sac, Inc.; Sheffield Instrument Co.; The Silex Co.; Alva Smith Mfg. Co.; F. A. Smith Mfg. Co.; Son-Chief Electric, Inc.; Southwestern Household Equipment Co.; Sparklet Devices, Inc.; The Spartan Co.; Sperti, Inc.; Standard Gas Equipment Corp.; Sunlite Mfg. Co.; Swartzbaugh Mfg. Co.; Swing-A-Way Steel Products.

Telechron, Inc.; Trimz Co., Inc.; Vacuum Can Co.; E. A. Vandy; E. R. Wagner Mfg. Co.; Wagner Mfg. Co.; Waring Products Corp.; Waverly Products Co.; Welko, Inc.; Welmaid Products Co.; R. D. Werner Co., Inc.; Wesson Houseware Products Co.; Joseph H. Wiley; Williams Oil-O-Matic Division, Eureka-Williams Corp.; Winsted Hardware Mfg. Co.

Kaiser Ships 3,631 Jet Washers During November

WILLOW RUN, Mich.—Shipments of Kaiser jet-propelled dishwashers totaled 3,631 units during the month of November, it was announced by W. A. MacDonald, vice president in charge of sales for Kaiser-Frazer Corp., and Graham-Paige Motors.

The units, which are of all-aluminum construction, are manufactured at the Bristol, Pa., plant of Kaiser Fleetwings, Inc., and are marketed through the nationwide Kaiser-Frazer and Graham-Paige sales network.

Shipments of standard and deluxe chassis models now aggregate more than 7,000, the Kaiser-Frazer executive disclosed. He said production schedules call for an increased output in December and for the addition of standard and deluxe cabinet models to the line early next year.

NARC Guide Will Aid In Formation of Local Groups

CLEVELAND—Intended to promote and aid in the formation of local associations of refrigeration contractors, a six-page guide for this purpose has been prepared by the National Association of Refrigeration Contractors here.

The guide lists several reasons why the NARC believes local associations will help contractors, and then proceeds to describe in full detail just how contractors should go about forming such an association. Included are suggested form letters and cards to use in calling the first meeting.

Stockton Firm Expands Business

STOCKTON, Calif.—Harry Koch has established an expanded refrigeration and heating service business at 1435 E. Miner St., it has been learned.

EQUIPMENT FOR SALE

- 4 110 BH Stainless Steel Gebhardt Units
- 3 110 BC Stainless Steel Gebhardt Units
- 8 Ammonia Thermal Expansion Valves
- 3 Ammonia Solenoid Valves
- 2 Thermostats
- 2 Drain Water Pumps
- 2 Time Clocks
- 4 Strip Heaters
- 1 Humidistat

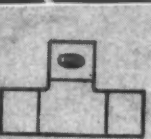
Above units are brand new and ready for immediate shipment.

Box No. 2175, Air Conditioning & Refrigeration News

LEAKPROOF

SOLDER

Fittings



* Dense, uniform structure.

* Formed under hydraulic pressure.

* Plug tested to assure close tolerances.

* Stronger joints because they fit!

STAND *high pressure high temperature*

TESTS show NIBCO WROT Fittings will withstand tremendous pressures or temperatures. So accurately formed by NIBCO patented processes, they form stronger solder joints with copper tubing... joints that can't be pulled apart or spring leaks. Made in standard types and sizes in great variety.

Write for Catalog 614

NORTHERN INDIANA BRASS COMPANY
ELKHART, INDIANA

NIBCO WROT Copper FITTINGS

Only new in name

Quality the same



(formerly Norse King Cooler)

now in production on all-steel

WALK-IN COOLERS

soon available

Display Cases and Beverage Coolers

The CLEVELAND REFRIGERATOR CO.
6600 SIDAWAY AVE. CLEVELAND 4, OHIO

For **DEPENDABLE** Refrigerants

"EXTRA DRY ESOTOO" (Liquid Sulfur Dioxide)

"V-METH-L" (Methyl Chloride)

Distributors of

"FREON" REFRIGERANTS
11, 12, 21, 22, 113

VIRGINIA SMELTING COMPANY
NEW YORK • BOSTON • DETROIT

Association Executives Confer at ASRE Meeting



During the recent national meeting of the American Society of Refrigerating Engineers, executives from other societies conferred during a dinner. In the front row (l. to r.) are Herman F. Spoehrer (REMA), John G. Bergdoll (ASRE), L. C. Bastian (ACRMA), Clifford Holske (ASRE), Harry D. Edwards (ASRE), F. E. Powell (National Bureau of Standards), Warren W. Farr (REWA), H. T. McDermott (RSES), Frank H. Faust (ASRE), Cyril Ainsworth, W. J. Donald, Carl M. Ashley (ASRE). Back row: S. R. Hirsch (ASRE), Burgess Jennings (ASRE), L. E. Price, Charles S. Leopold (ASRE).



Clarence E. Lund of Seeger Refrigerator Corp. receives the Wolverine Award from Arthur Hess for the best ASRE technical paper of the year.

Admiral Corp. Quits Radio Manufacturers Association

CHICAGO—Admiral Corp. has resigned from the Radio Manufacturers Association, Ross D. Siragusa, president of Admiral, has announced. No reason was given.

In a brief letter to Bond Geddes, executive vice president of the RMA, Mr. Siragusa asked that the resignation take effect immediately.

Westinghouse Absorbs Sturtevant, Beolite Firms; Issues \$50,000,000 Stock

PITTSBURGH—Issuance of \$50,000,000 in preferred stocks and the merging of the B. F. Sturtevant Corp. and the Beolite Corp. into the Westinghouse Electric Corp. has been announced here by Gwilym A. Price, president of the Westinghouse.

The stock issue is a second step in the financing program launched by Westinghouse to expand the company's operations to meet the growing demand for its products, Mr. Price declared.

Westinghouse is planning an expenditure of \$130,000,000 calling for \$120,000,000 in new financing, he said.

With the sale of the new preferred stock, present holders of 7% cumulative participating preferred will receive two shares of the new preferred stock and one-half share of common stock for each share of the old preferred stock.

Net sales during October hit \$42,000,000, indicating to Mr. Price that net annual sales would exceed \$500,000,000. Westinghouse sales passed the \$200,000,000 mark only in 1929, 1937, and 1940, he said.

The two firms merged into Westinghouse were wholly owned subsidiaries. The B. F. Sturtevant Corp. manufactures air conditioning equipment, air handling and ventilating equipment, and the recently announced electronic air cleaner, Precipitron. The Beolite Corp., located at Manor, Pa., turns out insulating varnishes.

Philco Expects '46 Net To Exceed Dividends Despite Early Losses

PHILADELPHIA—Philco Corp. expects net earnings for 1946 to exceed considerably its dividend payments for the year, despite a heavy loss sustained in the first quarter as a result of labor and other difficulties experienced by the corporation's suppliers and extraordinary expenses incident to reconversion, President John Ballantyne has informed stockholders.

In addition to the dividend on preferred stock, Philco paid \$1 per share on 1,372,143 shares of common stock in 1946, according to the letter.

Mr. Ballantyne also indicated that by the end of 1946, more than \$10,000,000 will have been reinvested in Philco from earnings and profits since 1939.

Mr. Ballantyne looked forward to a year of keener competition than at any time in recent years in 1947. He feels, however, that Philco is in a very strong position to meet the competitive bids of other companies.

G-E Will Drop Radio 'House Party' Jan. 10

NEW YORK CITY—General Electric Co.'s appliance division will cease to sponsor its three times a week radio show "General Electric House Party" on Jan. 10, it was announced here.

Prolonged production difficulties was given as the reason for dropping the program.

Varied Speakers Term Regulation W 'Needless Burden' on Durable Goods Sale

NEW YORK CITY—Mounting attacks on the revised Regulation W, whose credit restrictions are now centered on major appliances, furniture, and automobiles, are being made by a number of agencies.

Sen. Styles Bridges, Republican Senator from New Hampshire blasted the regulation as favoring the well-to-do and discriminating against the average worker, who, in his numbers, makes up the great consumer market of this country.

Said Sen. Bridges: "The Federal Reserve Board regulations which give the well-to-do with their charge accounts the opportunity to buy whatever they need on their own terms while denying the worker families of the country the opportunity to buy at all is contrary to American principles of fairness."

"This is a discrimination which either the Federal Reserve Board itself should take action to eliminate, or which for the good of the economy of the country and the comfort of the average wage earner

must be made the subject of definite action by the new Congress."

Expressing the same sentiments before the American Bankers Association in Chicago, Carl M. Flora, chairman of the association's consumer credit committee and vice president of the First National Bank of Milwaukee, said he favored discontinuance of Regulation W because its terms "compel monthly payments on the part of buyers of such size that many people, particularly veterans and families with low or moderate incomes, are prevented from buying necessary things, such as automobiles, refrigerators, washing machines, and other appliances."

The consumer credit committee argued that sound credit terms could be put into effect by the banks themselves and that such action would have an anti-inflationary effect.

Prof. Reavis Cox of the Wharton School of Finance, in an address delivered before the northern New Jersey chapter of the American Standards Association, declared that government control over installment buying of durable goods, even if it is more effective than Regulation W is ever likely to be, will not regulate the real inflationary or deflationary forces of the business cycle.

The consensus at the chapter's conference on credit and distribution appeared to be that Regulation W in its present form is an unnecessary burden upon the sale of durable goods. If continued in some form of permanent control, it may adversely affect the country's standard of living, it was felt.

B.F. Sturtevant Names Tillotson, McLaughlin

HYDE PARK, Mass.—John J. Tillotson, a Westinghouse air conditioning service engineer, has been appointed assistant manager of the service and construction department of the B. F. Sturtevant Co. division of Westinghouse Electric Corp. here.

Mr. Tillotson, before rejoining Westinghouse in 1944, was installation and service manager for the Westinghouse-franchised air conditioning contractor in the Pittsburgh area. He had previously worked for Westinghouse for a year after graduation from Antioch College.

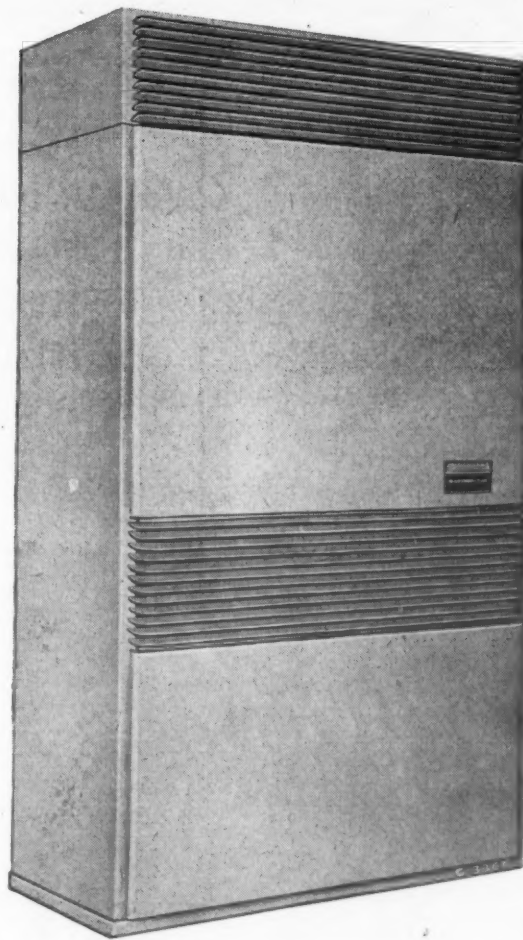
The Sturtevant division has also announced the appointment of Robert B. McLaughlin as supervisor in charge of the safety, plant protection, first aid, and volunteer fire department activities here.

WORTHINGTON

Air Conditioning and Refrigeration Report

Worthington Pump & Machinery Corporation, Harrison, New Jersey

"PACKAGED"
AIR
CONDITIONING
MEETS
A VITAL NEED
FOR
SMALLER
BUSINESS
PLACES



Worthington's Self-Contained Air Conditioners—built in two sizes, 3 and 5 ton refrigeration capacities—are especially designed to suit your small or medium sized place of business. These compact, attractive cabinets are complete, factory-built air conditioning systems, fully tested and proved—assuring you effective, low-cost air conditioning 365 days a year.

With one of Worthington's Self-Contained Air Conditioners in your store, shop or office, you will be convinced that these amazingly efficient "packaged" units give you real air conditioning at its best—helping

further to promote better health and better business in every type of smaller commercial and industrial organization. For full details, write for Bulletin C-1100-B29.

Worthington Pump and Machinery Corporation, Harrison, N. J., Specialists in Air Conditioning and Refrigeration machinery for more than fifty years.



Serving Phoenix — Served By Worthington

Occupied chiefly by the medical and related professions, the Professional Building in Phoenix, Arizona, also houses the prominent Valley National Bank and a capacious basement garage. Since its construction in the early 1930's, it has maintained practically 100% occupancy—Worthington air conditioning being one of the most important advantages enjoyed by tenants of this popular, up-to-date office building.



Two Good Reasons For Tenant Satisfaction

Two large-volume Worthington Centrifugal Compressors, "heart" of the air conditioning system in the Phoenix Professional Building, described above. While Worthington Centrifugal Systems are used primarily in the air conditioning field, they are ideally suited to many other applications—from cooling water or brine for industrial purposes to producing ultra-low temperatures for technical research.

"Integration" Is A Worthington Specialty

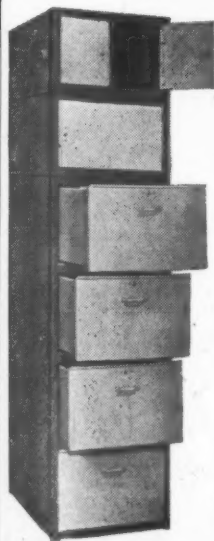
Making more of the "vital innards" of its systems from compressors to fittings, Worthington can supply completely "integrated" air conditioning or refrigeration for maximum efficiency and economy... another reason why there's more worth in Worthington. See your nearby Worthington Distributor for further information.



Air
Conditioning
and
Refrigeration

ASE FROZ-N-FOOD LOCKERS

THE LOCKER LINE THAT SELLS



New and added profits are provided for you with A-S-E Froz-n-Food Lockers. For A-S-E's the profit line of lockers. Note their features: smooth two-tone finish; drawer units are factory assembled; steel construction—these and other features make A-S-E Froz-n-Food Lockers easy to sell.

A-S-E is America's preferred locker. The locker for extra profits, complete customer satisfaction. Write today for more information.

ALL-STEEL EQUIPMENT, INC.
450 GRIFFITH AVENUE AURORA, ILL.

REFRIGERATION UNITS, PARTS AND SUPPLIES
AIR CONDITIONING EQUIPMENT
DELCO AND WAGNER—ELECTRIC MOTOR PARTS
26,000 SQUARE FEET OF SHOP AND WAREHOUSE SPACE
SAME DAY SERVICE—ON ITEMS IN STOCK
HERMETIC UNITS AND COMPRESSORS REPAIRED
WRITE FOR LATEST BULLETIN D-46
SERVICE PARTS COMPANY
2511 Lake Street, Melrose Park, Illinois
FOR SERVICE AND PARTS—WRITE TO SERVICE PARTS

Freon Condensers • Dry-Ex Water Coolers
• Evaporative Condensers • Forced Con-
vection Units • Oil Separators • Liquid
Receivers • Heat Exchangers • Pipe
Coils • Hi-Pressure Water Coolers • Flooded
Water Coolers • Ammonia Condensers
Write for Catalog on any item

ACME INDUSTRIES
JACKSON, MICHIGAN
Offices in principal cities

GREAT LINES!

Cash in on the complete Tyler Commercial line plus the fast selling Tyler Harder-Freezer Home Locker line. A winning sales program. National advertising! SUB-AGENCIES are available. Write the Tyler AGENT or Tyler Fixture Corp., Niles, Mich.

IT'S TYLER
FOR FOOD REFRIGERATION

INSIDE DOPE

by GEORGE F. TAUBENECK

(Concluded from Page 1, Column 1)

strikers a vote (thus ending such perpetual strikes as that at Allis-Chalmers); (5) Protection of the rights of the individual employee.

And here are some other suggestions we have received:

1. Prohibit one-man control of great affiliations of diverse labor unions.
2. Make it a crime to strike against any agency or industry when under federal government control.
3. Cause all the great divisions of organized labor to take out charters in each state, with presiding executives in each state whose control would be limited to one state.
4. Make it a federal offense for a union to call a strike in the same industry in more than three states at the same time, or to strike without at least a 60-day notice, in any municipal utilities plant, public school, federal or state institution, or hospital.
5. Do away with the check-off.
6. Require yearly a complete, published, federal audit of the finances of each union.

The long-suffering public is insisting that organized labor remember its obligations to its fellow citizens, and stay within the bounds of decency and fairness. Otherwise it can only arouse the enmity of the majority of our population and there-

by lose the great advantages it has gained.

Disregard of Law

The following letter is a case in point. It tells a shocking story.

Sweden Freezer Mfg. Co.
1140 West 53rd St.
Seattle 7, Wash.

Editor:

Our plant has been burdened with a jurisdictional dispute since early last spring, which is described in the attached folder. If we cannot get relief from our Supreme Court action, we are faced with going out of business or moving to an area less friendly to labor. To avoid our situation we would have had to abandon our desire to obey the intent and purpose of the Wagner Act and concede to the pressures of the monopoly minded Union.

I realize that jurisdictional disputes are common throughout the United States but our particular instance has these specific points of difference; such as,

The picketing AFL Unions are in open defiance of a National Labor Relations Board designation order. They do not have a single worker in our plant and their desires do not represent a single employee's wishes.

In our opinion this is a clear case of the most powerful monopoly union exerting its force with total disregard of law and order or the intent purpose of our laws. We are sure the general public would not tolerate the situation if they were made aware of the facts covered in our particular case.

We feel our problem is a strong argument as to the need for a change in the Wagner Act. It is an example as to the total disregard that the politically befriended labor organizations have for the very machinery set up to avoid such issues. It is an illustration of how political influence has given the labor organizations a hunting license to prey upon the Courts and the public.

Now that we have elected government representatives who have the ability and the interest to withstand the political pressure of labor monopolies, we must see that they fulfill the tremendous responsibilities placed upon them. Politics is everyone's business, not only in selection of our candidates but in exerting our influence upon those already elected to see that monopolies in either busi-

ness or labor are not operated to the injury of the people.

We urge you to make industry and the public aware of these situations. It will help them understand industry's problems and at the same time, give them an understanding of the restraints to labor that will surely come.

H. F. SWENSON

Free Advertisement

Obviously the NEWS would pass out of existence if it ran advertising for free. But here's a request that perhaps isn't free advertising after all, even if the requester fears that it may be.

It offers an opportunity for an individual to help himself, and to help his country at the same time. Any candidates?

HEADQUARTERS TACTICAL AIR COMMAND

Langley Field, Va.
Air Installations Section

18 December 1946

Editor, Air Conditioning & Refrigeration News
450 Fort St., West.
Detroit 26, Mich.

Dear Sir:

The Electrical and Refrigeration Branch, Air Installations Section, Tactical Air Command, Langley Field, Va., has a vacancy for a Refrigeration Engineer. This is a Civil Service job carrying a P-4 rating with a \$4,900 a year starting salary.

The man should preferably be an engineering graduate with a broad background of experience in all phases of refrigeration and air conditioning. The work involves technical supervision of design, construction and maintenance of refrigeration and air conditioning facilities at the Tactical Air Command airfields. Considerable traveling is involved and \$6 per diem is allowed for duty away from Langley Field.

Any individuals interested in applying for this position should submit a Civil Service Form 57 which may be secured from any Post Office or Civil Service Representative.

This office has no funds available for paid advertisements of this nature. Any publicity you could give this would be appreciated.

WALTER A. FAIKS,
Lt. Col., CE.
Executive Officer

FRIGID-FREEZE

ALUMINIZED
PRE-FABRICATED
WALK-IN FREEZING
HARDENING AND
STORAGE ROOMS
FOR FROZEN FOODS
AND ICE CREAM

IMMEDIATE DELIVERY
(MOST MODELS)

• BLAST FREEZING • FREEZING
• AUTOMATIC DEFROSTER • ZERO SENTINEL
• QUICKLY INSTALLED • THERMO-INDICATOR
• SELF-CONTAINED REFRIGERATION EQUIPMENT

The Right Size for Every Need

A FEW DISTRIBUTORSHIPS STILL AVAILABLE

PIONEERS IN LOW TEMPERATURE • DESIGNING • ENGINEERING • MANUFACTURING • CONSTRUCTION

REFRIGERATION CORPORATION of AMERICA

EXECUTIVE SALES OFFICES • 55 WEST 13th STREET, NEW YORK 11, N. Y.
• FACTORIES—PERTH AMBOY, NEW JERSEY

A DIVISION OF
NOMA
ELECTRIC CORP.

ENGINEERED to fit..

FORGED FLARE NUTS AND FITTINGS

Prompt Shipment on most items

Electromatic

2100 INDIANA AVE CHICAGO 16 ILLINOIS

There's Both Fun and Business at an ASRE Meeting



Meeting old and new friends is just about as important as attending technical sessions at the meetings of the American Society of Refrigerating Engineers. In New York recently Joseph Simons, Hartford wholesaler (left), compared notes with E. A. Thiele of Kold-Hold and C. F. Moores of Wyndmoor, Pa., while Mrs. Simons looked on. (Right) Veteran refrigeration engineers conferred during the meetings. Here are J. E. Fitzsimmons of York Corp. (New York), Charles R. Neeson of Chrysler Airtemp; J. B. Harvey of Harvey Cooling Towers, and W. S. Shipley, chairman of the board, York Corp.



In action here during the recent A.S.R.E. convention in New York is the Choral Wing of the "Bun and Meatball Society of St. Louis." This organization, which is gaining an ever-widening influence in industry gatherings, is devoted to the preservation and advancement of harmony singing. Following its virtuoso breakfast performance in the grand ballroom of the St. Paul hotel in Minnesota's capital last June, and its triumphs in all-night hamburger stands during the All-Industry conventions, the Choral Wing reached new heights in its New York audition. In the right foreground (in profile) is Herman Spoehrer, president of the Refrigerating Equipment Manufacturers Association, A.S.R.E. Council Member from St. Louis, and basso extraordinary of the Choral Wing. Surrounding him are a group of industry executives, brilliant engineers, college professors, and others—who just like to sing.

A&P Frozen Food Test Aid In Development of New Defrosting Methods

NEW YORK CITY—Research by the Great Atlantic & Pacific Tea Co. indicates that frozen foods must be packaged in rectangular boxes for the best result in defrosting by high-frequency heat.

The investigation carried on in the A & P laboratories in New York City also revealed that a maximum height of 3 in. is desirable, but not necessary, for cartons to be used in the high-frequency defrosting process.

In connection with this process, large scale defrosting may be greatly sped up by the use of conveyor belts regulated to allow the desired time needed for defrosting the various packages.

The results of this research conducted by W. H. Cathcart and J. J. Parker for A & P were published in an article, which appeared in *Food Research*. The article describes the experiments on high-frequency defrosting.

October Shipments of Steel Castings Increase 9%

WASHINGTON, D. C.—Shipments of steel castings for October reached 138,206 tons, which is a 9% increase over the preceding month, and compares with 130,344 tons shipped in October last year, according to the Bureau of the Census.

October's total is the second highest for any month this year; April shipments totaled 146,327 tons.

CPA Eases Inventory Curbs On Some Home Appliances

WASHINGTON, D. C.—Regulations controlling inventories of certain household and electrical appliances have been eased off somewhat by the Civilian Production Administration, which has dropped Table 4 from Priorities Regulation 32.

Manufacturers' inventories were formerly limited to a 30-day or practicable minimum working inventory, but now they are merely limited to a "practicable minimum."

Jordon Refrigerator Co. Plans Holding Price Line

PHILADELPHIA — In a recent bulletin explaining its price policy for the coming months, Jordon Refrigerator Co. here announced that it has decided against any increase in prices until "the national picture has cleared up."

The bulletin was signed by Albert Fogel, vice president and director of sales.

"It is our belief," Mr. Fogel said, "that when the situation has cleared and the fog is lifted so that the national economy is adjusted, and when there will no longer be a shortage of materials, as a result of strikes and other setbacks, allowing a steady production throughout industry, pricing will adjust itself at a reasonable standard level, thus making it profitable for all industries."

He said the company hopes to maintain price levels unless it becomes "completely impossible."

PURO ELECTRIC WATER COOLERS

BRANCHES IN PRINCIPAL CITIES

MAIN OFFICE
440 LAFAYETTE ST.
New York 3, N. Y.

PURO FILTER CORP.
OF AMERICA

DRINKING WATER
SPECIALISTS FOR 40 YEARS.



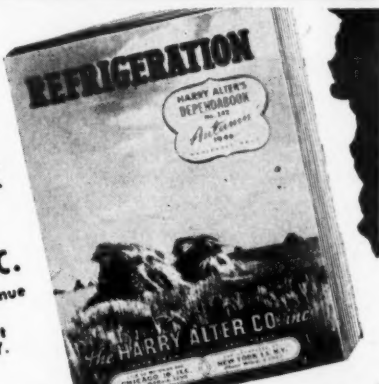
HEAT TRANSFER EQUIPMENT

MARLO
COIL COMPANY
SAINT LOUIS, MISSOURI

Buffalo Firm Completes \$20,000 2-Story Addition

BUFFALO — The Buffalo Electric Co., Inc., wholesale appliance firm, has completed a two-story addition to its building at 75 W. Mohawk St., at a cost of approximately \$50,000. The entire ground floor of the structure is devoted to garage space, housing the company's trucks.

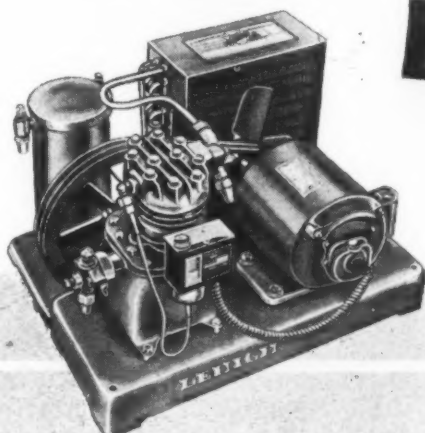
IT'S A NEW ONE!
Just write on YOUR letter-head for YOUR copy of the **NEW DEPENDABOOK** today!
THE HARRY ALTER CO., INC.
1728 So. Michigan Avenue
Chicago 16, Ill.
134 Lafayette Street
New York 13, N. Y.



REPORTS GENERAL CONTROLS CO.

There are two ways to test a piece of equipment. Normal use — or gross abuse. General Controls Company, one of America's major manufacturers of refrigeration controls really gave a 1/3 H.P. BLU-COLD Unit the works. The photo on the right shows their interesting and instructive controls display which was taken on a barnstorming tour of the country and which you remember at the big Cleveland show. General Controls tells us that the BLU-COLD Unit has been crated, uncrated, loaded, unloaded, shipped and banged around at least one-hundred times. It never failed — it never caused trouble — it never missed a show — it did its job every time. When a keen judge of equipment like General Controls says something is good — you can believe it!

NOW IN PRODUCTION—
1/4 — 1/3 — 1/2 — 3/4 and 1 H.P.
FULL LINE TO INCLUDE UP TO 5 H.P.
(1/3 H. P. Unit Illustrated)



Lehigh
BLU-COLD
COMMERCIAL REFRIGERATION

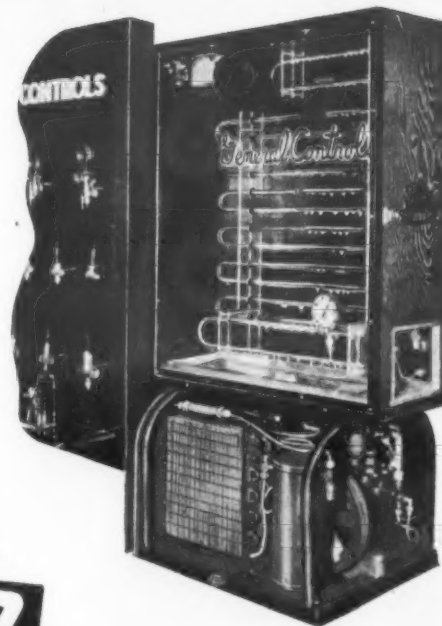


Photo: Courtesy of
GENERAL CONTROLS CO.
DETROIT, MICHIGAN

Lehigh Manufacturing Co.

Plant: LANCASTER, PA.

Wall WIRE
PRODUCTS COMPANY
PLYMOUTH • MICHIGAN

Makers of
REFRIGERATOR SHELVES • STAMPINGS
FORMED AND WELDED PRODUCTS

We had the
privilege of making the
First Refrigerator Shelves
of Stainless Steel Wire,
which were used in
Refrigerator Cabinets

They'll Do It Every Time By Jimmy Hatlo



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Out With Special Privileges - - Revise the Wagner Act!

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Published Every Monday by BUSINESS NEWS PUBLISHING CO.
450 W. Fort St., Detroit 26, Mich. Telephone Randolph 0924.

Subscription Rates: U. S. and Possessions, Canada, and all countries in the Pan-American Postal Union: \$4.00 per year; 2 years for \$7.00. All other foreign countries: \$6.00 per year. Single copy price, 20 cents. Ten or more copies, 15 cents each; 50 or more copies, 10 cents each. Send remittance with order.

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VOLUME 49, No. 18, SERIAL No. 928, DECEMBER 30, 1946

Is Santa Claus Dead?

THE YEAR 1946 was confusing and bewildering and disappointing and frustrating for most of its life. Yet, at its tag-end, something new was added. After 15 dreary, discouraging years it suddenly became apparent that the American people had lost their faith in Santa Claus.

At the polls in November they voted against almost everything and everybody they'd voted for during the last decade-and-a-half. Even loyal members of labor unions voted against the advice of their leaders. And the so-called "common man" finally discovered that the New Deal had become a Raw Deal.

Secondly, the toughest union dictator of them all, John L. Lewis, bowed to the ominous pressure of public opinion, and called off his potentially paralyzing coal strike. By so doing, he may have clipped the wings of Phil Murray, Walter Reuther, and other ruthless advocates of continuous inflation. Had Lewis won, they'd have knocked our national economy down into another tailspin by trying to out-strike the canny John L. But now they're not so belligerent.

To be sure, the C.I.O. is raising a hub-bub over the phoney report issued by their kept man, Bob Nathan. (Like Truman, Bob Nathan learned all about the nation's business by selling neckties, underwear, and haberdashery.) But this time, that phoney set of statistics which purportedly prove that wages can be upped without raising prices is being pooh-poohed by nearly everyone. We've all heard that song before, and we've learned that it's off-key. It just doesn't ring true.

Thirdly, it has become apparent that many of the veterans' pressure groups have taken a second look at some of their proposals for subsidies and hand-outs. "If we'll have to pay for it ourselves," they're now asking, "where's the advantage to us?"

All in all, these manifestations of an awakening Public Conscience add up to a belief that the American people have come to their senses. No longer do they trust in Santa Claus. They seem to have learned that you can't get something for nothing.

It will be a tough job to eradicate the notion that the government can guarantee us all a life of ease, however. Too many sophomore minds have been misled by goofy instructors into accepting that obviously all-wet theory.

They're all wrong, of course, but they won't be won over easily to the idea that they'll have to work hard and overtime to get ahead. They've been corrupted by their wrong-way teachers. Even the economic lessons which 1946 has brought home—clean-cut and crystal-clear though these lessons may be—probably won't erase entirely all the false notions fostered by F.D.R. Ahead of us is a tremendous educational job.

Notwithstanding these negative facts, we must acknowledge that we have made real progress. Significantly, we have enjoyed the most munificent Christmas season of all time. All retail sales records were smashed into smithereens. Manufacturers of greeting cards were overwhelmed by the demand for their flimsy products. The Christmas spirit pervaded, and a great lift of spirits was experienced by all.

Obviously, most of us were happy and optimistic at the year's end. Discounting unfavorable boom-and-bust predictions, we went all out to make this 1946 holiday period memorable.

Could it be that the Men Who Make Decisions made an unprecedentedly joyous Christmas possible because they were tremendously encouraged by a sudden shift in the political wind?

Could be.

Anyway, it's certainly true that most of us enjoyed the year-end holiday season to the hilt, and that we're looking forward hopefully to the advent of happier days.

Fenton Tells ASRE:

'Excellent Results'—Not Just 'Good' Are Possible for the Housewife Who Prepares Her Own Cooked Frozen Foods

NEW YORK CITY—"The housewife may prefer to bake frozen, uncooked pies rather than warm up a pre-baked, frozen one because she'll like the aroma of baking and she'll also feel that she's had more part in its preparation," commented Dr. Faith Fenton of Cornell University's School of Nutrition in a discussion of "Frozen Cooked Foods" delivered at the forty-second annual meeting of the American Society of Refrigerating Engineers here recently.

Dr. Fenton described results of laboratory research conducted on rolls, pies, and ice cream in an effort to determine the best methods and recipes for home freezing of cooked foods.

"Excellent results—not just 'good' ones—are possible in the home," she declared. "The housewife can control cooking, freezing, and storage temperatures, but, of course, whether she will or not may be a question."

Reports Conflict on Rolls

"No frozen prepared food produces more conflicting reports than frozen, unbaked rolls," she said. "Some rolls are good, but many are failures; they never rise, but simply flatten out and develop a tough, leathery crust."

Referring to commercially produced items, Dr. Fenton said that she had tasted yeast rolls "that were good in Chicago but the same brand was poor in the East. Apparently something had happened to cause them to deteriorate in shipment or storage."

"Furthermore, the time required to prepare some frozen, unbaked rolls for the table at present is so long that it is easier to make the rolls from the original ingredients."

In the tests reported by Dr. Fenton, a freezing temperature of -20° F. and a storage temperature of 0° F. were employed. Results of the various recipes and cooking and freezing methods were tested for palatability by from six to 10 experienced judges who noted their comments on score cards. For yeast rolls two recipes were used—a standard recipe, and one giving a rich roll.

"Rolls made using both the standard and the rich recipe were excellent when made under controlled conditions. The rolls made with milk scored higher in flavor and moisture than did those made with water," declared Dr. Fenton.

Improving the Flavor

"A slight increase in sugar in the standard recipe resulted in a better flavored roll—probably because more sugar was used by the yeast in the frozen dough than in the unfrozen. Increased amounts of yeast did not improve the product and were not necessary under controlled conditions."

"The frozen baked rolls, upon being taken from the freezer and immediately reheated in their sealed wrappings, were excellent even after 12 months' storage," commented Dr. Fenton. "If they were not used soon after their removal from the freezer, however, they tended to acquire a stale flavor."

"Care was necessary also to prevent their drying out—not only during storage, but also during reheating. Like frozen bread, they thawed quickly because of their low moisture content."

"The dough frozen in a large ball presented difficulties. It required a long time to thaw. After that, the shaped rolls required rising. During both periods, a warm, moist atmosphere was necessary. The long period from the freezer to the oven permitted the possibility of many undesirable changes to occur, including flavor changes, loss of the carbon dioxide leavening agent, and loss of strength of the gluten framework of the dough. Freezing the dough in a sheet was a slightly better method, but it still offered too many chances for failures."

"The fully risen rolls that were baked without any thawing were successful except that they were slightly smaller in volume than were the corresponding freshly baked rolls," declared Dr. Fenton. "From the management standpoint, this method is excellent and has real possibilities."

One of Basic Aims

"One of the basic aims should be to handle each frozen cooked food so that it can be baked or reheated immediately upon removal from the freezer cabinet. This is always important to save time. It also makes the commercially frozen cooked foods nearly foolproof."

"The fully risen rolls that were thawed before they were baked tended to lose volume and flatten out during thawing. The half risen rolls did not rise completely and also flattened out and had a coarse texture. The rolls frozen before rising were excellent products when all precautions were used. These included keeping the rising period to a minimum and not storing the rolls too long."

With regard to frozen pies, Dr. Fenton declared that no fresh fruit should be used for frozen pies if the fruit itself was not suitable for freezing.

"All of the frozen pastry was more tender than was the corresponding fresh pastry," she reported. "No explanation was found for this; it may be that the strength of the gluten decreased. Probably slightly less fat is necessary than for freshly made pastry."

"Pies baked before freezing were not so high in quality as those baked after freezing. The taste and aroma were not so fresh. The thickened juice was not so transparent nor of so good a consistency. It tended to be pasty. If thawed at room temperature or in the refrigerator, these pies seemed like day-old pies; the aroma and taste were not like those of fresh pies, and the undercrust tended to be soggy."

"Those thawed and reheated in the oven at 350° F. for from 25 to 30 minutes or at 400° F. for 15 minutes were more like fresh pies. Further—

New Sections Receive Their Charters from the ASRE



During the annual meeting of the American Society of Refrigerating Engineers, charters were presented to new sections in Erie, Buffalo, Dallas-Ft. Worth, and Georgia. (Left) J. G. Woodruff, chairman of the Georgia Section, receives the charter from Paul B. Christensen, chairman of the membership committee, as Clifford F. Holske, ASRE vice president, looks on. (Right) Hugh Martin, head of the Dallas-Ft. Worth section, receives his charter, too.

more, more time was required and possibly more fuel for bringing these pies to a high temperature, then freezing and reheating them.

"Unbaked pies which were thawed, either at room temperature or in the refrigerator, before being baked tended to have a soaked, underdone undercrust. Pies placed while still solidly frozen in a 450° F. oven for 35 minutes and then baked at 350° F. for 15 minutes received the highest palatability scores. They also had the advantage of requiring the shortest total preparation time and probably the least fuel."

Home-made ice cream can be successfully held in a home freezer for about three weeks, but after that they begin to lose their fresh flavor slightly and to "settle down," reported Dr. Fenton.

Better results were generally achieved, she said, with ice cream that had been prepared in hand freezers than the conventional ice cube trays. Using aluminum trays, the tray type cream was frozen not only in the tray compartment of a refrigerator, but also in the freezing and storage compartments of a home freezer. In addition tests were conducted with paper containers.

"The ice creams frozen in a hand freezer were smoother than those frozen in any other way," said Dr. Fenton. "All of them were so smooth that no differences were noticeable. Of ice creams placed in an aluminum tray, those frozen in the freezing

compartment of the refrigerator (13° to 15° F.) were smoother than those frozen in the freezer compartment of the cabinet (-20° F.), which in turn were smoother than those frozen in the storage compartment (-5° to 0° F.).

Since the air temperature in the ice cube compartment of the refrigerator was the highest, this finding was unexpected. The probable explanation is that the entire bottom of the tray was in contact with the freezing plate. The bottom of the tray had been moistened with water.

Use of Paper Containers

"The ice cream frozen in the one-pint and one-half pint paper containers was the least smooth of any of the ice creams," commented Dr. Fenton. "Paper is a poor conductor of heat and cold; the circular containers did not allow much contact with the freezing plate walls, and the packages were rather thick with a diameter of about 1 1/2 to 1 3/4 in."

"The aluminum trays had the advantage of being good conductors of heat. The disadvantages of the rolled sides, however, [preventing close contact with freezer walls] apparently offset this advantage. The size of the crystals bore a direct relation to the rate of freezing. This confirms the theory that it is the rate of freezing and not necessarily the freezing temperature which is the controlling factor."

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Guide to Stories Which Ran In the News In '46

Editor's Note: The following is a listing of some of the stories and articles appearing in AIR CONDITIONING & REFRIGERATION NEWS during the year 1946, classified by general type of subject matter.

This is, of course, by no means any kind of a complete index of the material which has been published in the weekly issues of the NEWS. Rather, it is a compilation of the headlines or titles of articles to which readers may wish to have reference over a period of time. It should be particularly valuable to those who maintain complete files of the NEWS.

Those who wish back copies of the issues in which a particular article or articles are listed, may order them at the standard price of 20 cents per copy. However, we are "out of stock" on a number of issues and thus can't guarantee to fill all orders.

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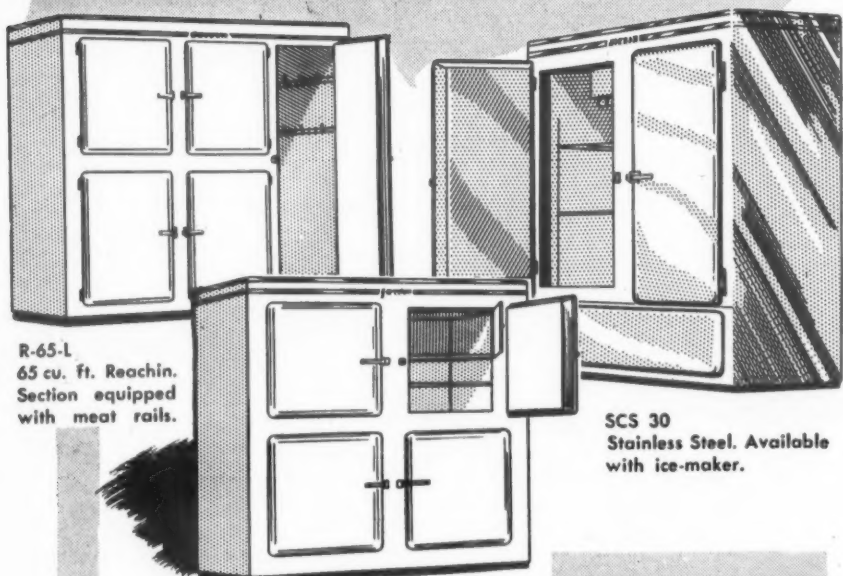
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Guide to '46 News Stories

(Concluded from preceding page)

Read to Success in Frozen Food Merchandising—p. 17, Nov. 25.
8-Ft. Freezer Plus Locker Storage Saves Farmer Most Claims—p. 12, Dec. 9.
Dehydrofreezing Method Saves Processor Money, Improves Product, Govt. Says—p. 15, Dec. 16.

GOVERNMENT REGULATIONS, CODES

Text of Housing Order Exempting Air Conditioners and Commercial Cabinets—p. 8, May 20.
New York City Refrigeration Code Permits Use of "Freon-21-22-113"—p. 20, July 1.
Features of Proposed Wisconsin Refrigeration Code—p. 1, Sept. 2.
Proposed Ordinance to Bond and License Detroit Service Firms (Text)—p. 40, Sept. 30.
Contractor Will Test Wage-Hour Case in Court—p. 1, Oct. 28.

HOME FREEZERS

Excise Tax Doesn't Apply to Freezers—p. 1, Jan. 21.
Sales of Freezers Facing Frozen Food Industry—pp. 10-11, May 6.
Installing Plates in Home Freezers, Locker Plants—pp. 26-27, May 6.
Milwaukee Journal Survey of Consumers' Home Appliance Home Freezer Needs—p. 6, May 20.
Detroit-Washington-Baltimore Poll on Use of Home Freezers—pp. 16-17, May 20.
Poll of Idaho Farmers on Home Freezer Needs—p. 5, May 27.
Tests Prove 4 In. Wall Thickness Best in Home Freezers—pp. 10-11, June 17.
Proposed Test Procedure Standards for Farm & Home Freezer Storage Cabinets—pp. 14-15, July 19.
Complete Listing of Home Freezer Prices—pp. 30-39, Sept. 30.
Additional Listings of Home Freezer Prices—p. 14, Oct. 28.
Alert Servicing, Consumer Education Can Spur Acceptance of Home Freezer, Says E. T. Benson—p. 10, Nov. 18.
Seattle Department Store Promotes Sales of Home Freezers by Renting Them on 6 Mos. Trial Basis—p. 11, Nov. 18.
Pitfalls in Home Freezer Market Exposed; Trade 11¢ for 21¢ Economy Angle Outlined—p. 16, Nov. 25.

HOUSEHOLD APPLIANCES

An Outline of "Good Practice" in Store Arrangement & Lighting—p. 10, Jan. 7.
Latest Refrigerator Prices as Established by OPA—p. 29, Jan. 14.
84 Dealers in Western Pennsylvania Tell Their Plans for Merchandising—p. 9, Jan. 21.
More Dealers Than Prewar Will Sell, Demonstrate Complete Electric Kitchens—p. 10, Jan. 21.
Plumbing and Kitchen Elements—pp. 14-15, Feb. 4.
Increasing Use of Electric Water Heaters Follows Lowering of Rates, G-E Finds—p. 6, Feb. 18.
Central Boiler With High Temperature Liquid Supplies Energy for Appliances—p. 17, March 11.
LIFE Dealer Survey Says Seller's Market Vanishing—p. 6, April 15.
Bendix Course for Home Laundry Demonstrators—p. 10, April 22.
Results of "Chicagoland" Appliance Consumer Poll—p. 6, May 6.
New Hotpoint Servicing School for Repairmen—pp. 12-13, May 13.
Kitchen Appliance Layout Designed for New York Housing Project—p. 10, June 3.
Unusual, But Untested New Designs in Household Refrigerators, Ranges—p. 2, June 10.
Modern Home Laundry Affords Greater Adaptability as a Planned Work Center—p. 8, Sept. 2.
With Sales Only 15% of Total Appliance Demands, Co-ops Seek Larger Share—p. 8, Oct. 7.
Dealers See No Trade-In Problem for 1-5 Years—p. 2, Oct. 21.
Private, One-Appliance Displays May Increase Dealer Sales Success—p. 2, Oct. 21.
High Dealership Mortality Predicted by Kelley in Over-Expanded Appliance Market—p. 6, Oct. 21.
Veterans Surprise Hotpoint by Ordering Deluxe Package Kitchens, Not Basic Units—p. 9, Oct. 21.
"Package" Sales Depend on Dealer's Kitchen Planning "Know-How," Electrical League Told—p. 8, Nov. 4.
Listing of Retail Ceiling Prices on Refrigerators—pp. 14-15, Nov. 4.
Refrigerator Cited as Key to U. S. Prosperity—p. 16, Nov. 4.
\$21,000 Household Refrigerators Shipped in First 6 Mos. of 1946—p. 4, Nov. 11.
Dealer Avoids Sales Personnel Conflict by Maintaining 'Pool' of Commissions—p. 14, Nov. 11.
Consumer Can't Recover 'Leftover' Deposits on Appliances, Court Rules—p. 18, Nov. 11.
High Cost of Living Reduces Durable Goods Prospects—p. 2, Nov. 18.
15-Mos. Terms on Appliances Start Dec. 1—p. 1, Nov. 25.
Credit Men Ponder Dealer's Position—p. 1, Nov. 25.

Chance for Success of New Appliance Stores Reviewed by Commerce Dept.—p. 2, Nov. 25.
1 Dealer per 435 Homes: More Than Twice Prewar Figure, Kelley Speech Emphasizes—p. 8, Nov. 25.
"My Priority System is Best," Dealers Say—p. 10, Dec. 2.
6 Designs for Two-Temperature Refrigerators Analyzed and Appraised on Relative Merits—p. 16, Dec. 2.

The NEWS has most of the back issues of 1946 in stock, but a few have been completely sold out. Limited supplies are available on the following 1946 issues: Jan. 7, 14, 21; Feb. 4, 11, 18; April 22, 29; May 5; June 3, 10; July 22, 29; Aug. 26; Sept. 2, 9, 16, 23; Oct. 7, 14; Nov. 11, 18, 25; Dec. 9.

Three Ways Proposed for Handling Trade-Ins—p. 3, Dec. 9.
How Revised Regulation 'W' Will Affect Dealers—p. 4, Dec. 9.
New Prospect Card Supplies Complete Information for Follow-Up Calls—p. 4, Dec. 16.
Dealers Rent Trade-Ins to Prospects Who Have Signed Up For New Boxes—p. 11, Dec. 16.
Jan.-Sept. Household Refrigerator Scoreboard—p. 14, Dec. 16.
"Selective" Dealer Setup Under Fire in U. S. Suit on Bendix Distribution—p. 1, Dec. 23.

INDUSTRIAL REFRIGERATION

Modern Bakeries Are Increasing Use of Refrigeration to Improve Production—p. 19, March 18.
Proposed Eastern Chiller Installation Will Achieve Volume Wine Cooling—p. 2, Nov. 4.
Refrigeration Cuts Wine Aging on Coast from 2-3 Years to a Few Months—p. 5, Nov. 4.

LOCKER PLANTS

Lansing, Mich. Locker Plant Stresses Service as Key to Success—pp. 12-13, June 10.
How Design Holds Line on Locker Plant Operating Cost—p. 12, Aug. 5.
Tabulation of Locker Plants by States—p. 17, Sept. 30.
150 New Lockers Opening Into "Warm Room" Suffer Only 1-2° Loss in Temp.—p. 23, Oct. 28.
30,000 Locker Plants by 1951, Predicts Locker Association Head—p. 49, Oct. 28.
Locker Operators Can Cut Costs With Preventive Maintenance Plan—p. 50, Oct. 28.
New Locker Plant Gives Prospects 10 Days to Claim Locker; Two-Year Rental Required—p. 8, Nov. 11.
Debt-Free Locker Plants Today Clear Way for Future Expansion, Banker Tells Meet—p. 23, Nov. 25.
National Frozen Food Locker Assn. Told Unofficial Results of Federal Processing Prices in 2,000 Locker Plants—p. 23, Nov. 25.
Refrigerated Locker Units Rise 173% in 2 Years in New England—p. 2, Dec. 9.

LOW TEMPERATURE REFRIGERATION

Low Temperature Refrigeration—pp. 18-19, Jan. 7.
Thermal Conductivity of Insulation Reduced as Temperature Goes Down—p. 16, Jan. 21.
Applications of High Side Floats in Low Temperature Systems—p. 15, May 20.
Low Temperature Tests Show Drop in Heat Conductivity of Common Insulators—p. 19, July 8.

MEDICAL

Refrigeration May Permit Replacement of Severed Limbs, Doctor Believes—p. 1, Feb. 11.
Skin-Grafting Operation Aided by Refrigerated Storage of Grafts—p. 7, April 1.
Keeping Developer, Fixer, Wash Bath Refrigerated Found Vital to Production of Good X-Ray Pictures—p. 32, Oct. 28.
Special Design Replacement Box for Biologicals Aids Storage of Drugs—p. 5, Nov. 4.

MISCELLANEOUS

How a Refrigeration Supply Wholesaler Keeps Track of His Customers—pp. 16-17, March 25.
List of Work Standards Recommended by On-the-Job-Training Head—p. 2, April 29.
Elbow Grease Basic in Controlling Growth of Microbes on Food in Refrigerated Storage—p. 18, July 1.
Socony-Vacuum Introduces "Sovabead," New Solid Drying Agent That Permits Continuous Operation During Heat Regeneration—p. 20, Sept. 23.
New Products Introduced at the All-Industry Exposition—pp. 7, 11, 15, 17, 20, 21, Nov. 11.
All-Industry Show New Products—pp. 17, 18, 19, 21, 23, Nov. 18.
Refrigerated Storage Reduces Normal Food Deterioration Process, States Dr.

Tressler—p. 14, Nov. 25.
More Products That Were Shown to the Field at the All-Industry Exposition—p. 21, Nov. 25.

SERVICE

Record of 'Every Step' in Repair Work Precludes Complaints, Boosts Profits—p. 8, Jan. 21.
Contract Service—How Can Its Problems Be Avoided?—p. 27, Jan. 21.
Planning to Train Veterans 'On the Job?' Then Here's What You Ought to Know—Part I—pp. 14-15, Feb. 18.
Part II—pp. 10-11, Feb. 25.
P. B. Reed in Toronto RSES Talk Cites Problems of Refrigeration Servicemen Opening Own Business—p. 4, April 8.
Airserco Device to Start, Test Condensing Units—p. 20, May 27.
List of Precautions to Prevent Accidents in Service Work—p. 17, June 3.
Suggested Prices for Overhaul and Contract Service Work—p. 18, July 29.
How a Big Refrigeration Contracting Co. Operates—Part I—Organization—p. 6, Aug. 5.
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New Service Valve Block Said to Simplify Drying Installation, Repairing of Systems—p. 13, Oct. 21.
Selling Replacement Hermetics Suggested As Service Man's Answer to Repair Problem—p. 7, Nov. 18.
Leak Detecting Is Quite An Art—But Here Are Some Tricks That Will Help—p. 23, Dec. 2.
Servicemen Not Endangered by Ammonia If He Takes Proper Precautions, RSES Told—p. 8, Dec. 23.

REFRIGERATION PROBLEMS AND THEIR SOLUTION

by P. B. Reed
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Temperatures, Pressures, and Heat Contents in Compression Cycle—Part I—pp. 20-21, Jan. 14.
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The Capillary Tube—Part I—p. 16, Feb. 18.
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The High-Side Float Valve—Part I—p. 11, March 4.

Part II—p. 24, March 11.
The Low-Side Float Valve—Part I—p. 20, March 18.
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Service Chart for System Using Automatic Expansion Valve With Temperature Control—Part I—p. 30, April 8.
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Servicing Chart for System Using Thermostatic Expansion Valve and Temperature Control (Bulb on Evaporator)—Part I—p. 23, May 27.
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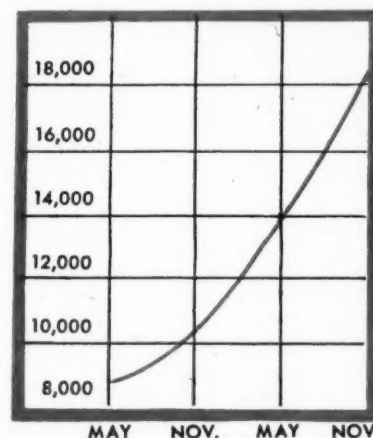
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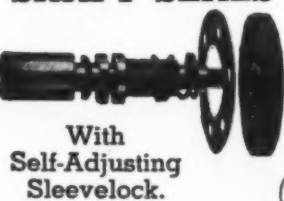
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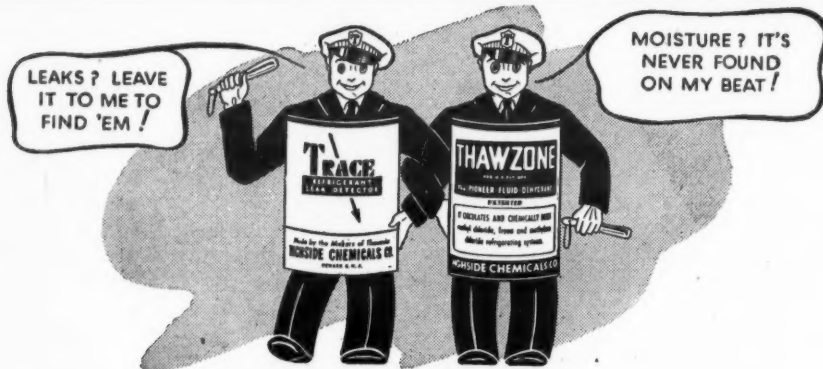
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Servicing Truck Refrigeration Units

Editor's Note: Continuing this series of articles devoted to servicing of the reverse-cycle Trail-Aire truck refrigeration unit, this week's instalment presents further questions which have come in from truck operators using three units in the field. The questions and answers are from the files of Advance Mfg. Co. and were prepared with the assistance of Henry O. Kirkpatrick, chief engineer of Advance.

Instalment No. 14

Compressor Valve Plate Broken

Question: What would cause the compressor valve plate to break?

Answer: A broken valve plate could have been caused by improper operation of the unit. If the unit were left standing idle with the hand valves open, then the crankcase and suction line would fill with liquid refrigerant. When the machine was started, pumping the liquid refrigerant through the valves would cause a valve failure because the valves were designed to handle only vapor.

You must caution this and all other users to close all the hand valves when the machine is idle. This precaution will save much wear and tear on the valve plate, shaft seal, and other moving parts of the compressor.

Starter Trouble Prevents Operation of Unit

Question: We found that the Bendix drive had rusted and would stick, that is, it would not release out of the flywheel when the motor started. The flywheel would drive the starter so fast that it threw out the windings. What can we do to prevent this happening?

Answer: We suggest that you advise the owner to remove the starter motor at three-months intervals, wash it clean with gasoline, allow to dry, and lubricate with dry graphite powder. Never use oil or grease on a Bendix drive.

What Causes Motor Valves To Burn Up?

Question: What do you recommend to prevent valves from burning and sticking on this gas engine? One of our operators reported to us that he is using 1 qt. of 10-weight motor oil with every 10 gals. of gasoline and has been getting good service out of his unit. We shall appreciate your comments on this.

Answer: The use of leaded gasoline would cause the valves to burn up, and we believe that if you will check you will find that the operator has been using leaded gasoline.

For long life and trouble-free operation of this engine, it is necessary to use non-leaded gasoline with an octane rating of at least 68.

Many present day gasolines are treated with lead compounds in order to raise the octane rating of their fuels so that they can be used in engines without causing detonation with its evil effects.

While this lead treatment of gasoline raises the octane rating of the fuel, it is also a fact that the lead compounds will deposit in the combustion chamber of the engines, on the valve heads and stems, and some will also work down into the crankcase lubricating oil, which will eventually take on the appearance of light grey paint.

All of these deposits have a bad effect on the engines, but the one

that will show up serious results first, is the deposit on the valves. These deposits build up to a thickness of about $\frac{1}{32}$ of an inch in about 50 hours of operation. This building up process is more pronounced with engines running constantly at the same speed and load, than when operating intermittently and at varying loads and speeds.

When these lead deposits reach a thickness of about $\frac{1}{32}$ of an inch, they will crack and flake away in patches, after which the deposits will build up again and so on indefinitely. When this breaking away in patches occurs on the beveled seats of the valves, leakage will occur at these points and the flame of combustion will blow through, causing any material, of which the valves might be made, to burn up.

This condition occurs in all types of engines, whether air-cooled or water-cooled but is especially serious in this engine due to its constant speed and constant load as mentioned above. No method has been found for preventing these lead deposits from forming. The lead will not burn, but is left in the engine.

As for the second operator, we can readily understand why he has not had engine trouble due to the use of motor oil as an upper-lubricant. An upper-lubricant added to gasoline will keep the valves lubricated as well as the upper cylinder walls.

In the first instance mentioned, the valves probably became sticky due to the use of leaded gasoline, whereas in the second instance, even though this operator was using leaded gasoline, the addition of a lubricant to the gasoline supply kept the valves free and in good working order.

Sticky valves will burn very rapidly due to the flame of combustion's blowing by the valves when they do not seat tightly because of sticky stems.

Automatic Choke Appears To Cause Trouble

Question: We are having difficulty with the gasoline engines on our trailers and wonder if there is something you can do to help us. The trouble is on the automatic choke of the carburetor. It seems that if we do not use the engines for a week or two, when we try to start them one or two of the plugs foul up with raw gasoline.

The drivers are not permitted to do any mechanical work on these motors. Therefore, they probably run them with a missing plug, and by the time they call us, the crankcase is filled with gasoline.

We have removed the automatic chokes, cleaned and oiled them. They do not stick, just seem to choke in starting and do not release rapidly enough to stop drawing the raw gas into the motor.

Answer: Outside of the steps you have already taken, we suggest that you try setting these chokes on the "lean" side. As you probably know, this can be done by loosening the three screws on the back side of the choke and rotating the plate as indicated by the arrow to a "lean" setting. Experimental setting of this plate will give you the point where it will operate successfully.

(To Be Continued)

R. L. Houghton Becomes McCombs Counter Man

DENVER, Col. — R. L. (Dick) Houghton is now working as a counter man at McCombs Refrigeration Supply Co. here, Harold R. McCombs has announced.

Mr. Houghton has served as counter man at the Western Appliance Co. here for three years. Prior to that time, he worked for Kelvinator distributors in St. Louis and Kansas City, Mo.

Mr. Houghton is secretary of the Mile High chapter of the Refrigeration Service Engineers Society.

Paint Catalog Lists Rust-Proofing Items

AMBLER, Pa. — The American Chemical Paint Co. here has recently issued a catalog providing a reference list of rust proofing chemicals, protective coatings, metal cleaning chemicals, and inhibitors for metal fabricators.

The catalog is claimed by the company to be a "thumbnail guide to complete metal protective service." The firm also offers further information in technical service data sheets.

University Electric Co.

Moves to Larger Quarters

SEATTLE—University Electric Co. here has moved from 4722 University Way to larger quarters at 4744 University Way.



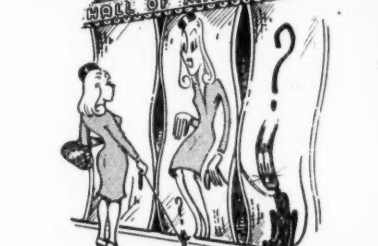
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Refrigeration Problems And Their Solution

By P. B. Reed

For Service and Installation Engineers



Manager, Refrigeration
and Air Conditioning
Division, Perfex Corp.

Electric Currents (2)

VOLTAGE, AMPERAGE, RESISTANCE, AND VOLTAGE DROPS

Voltage is the measurement of the pressure of the electricity between two points. It is determined by the design and winding of the generator or transformer, and the output voltage of the generator or transformer is fairly constant.

Common voltages are: 110 volts for almost all inside lighting and small motors in homes, stores, factories, and other buildings; 220 volts for larger motors even in homes but more particularly in stores, public buildings and factories; and 440 volts also for larger motors. The voltage at the generator may be almost any multiple of 110, 220, or 440 but 2200 volts is a common terminal voltage of the large generators.

If the electricity is generated at the power plant at 2200 volts and is used at 220 volts in the factory, there must be some way of "stepping it down," that is, changing it from 2200 volts to 220 volts. There is; and it is a very simple way that requires no moving parts and has a very high efficiency, for there is very little loss in the process.

WHAT A TRANSFORMER DOES

This is done in a "transformer" which consists of two coils of wire wound around the same piece of iron known as a "core." The 2200 volts is passed through one coil that has, for purposes of simplicity, say 1,000 turns of wire around the core. The other coil consists of only $\frac{1}{10}$ as many turns of wire, or 100 turns, so the voltage taken from the second coil is only $\frac{1}{10}$ as much or 220 volts. The coil for the incoming electricity is called the "primary coil" of the transformer and the coil for the outgoing electricity is called the "secondary coil."

So by winding the transformer with coils of different numbers of turns the outgoing voltage can be about whatever we want it. If the incoming voltage is 2200 and we want 110 from the secondary we have only to wind the primary with 20 times the number of turns as the secondary, for 2200 is 20 times 110.

In this way the electricity is taken from the generator at 2200 volts and distributed around the city by means of wires that are known as "primaries." At various places a transformer is placed (usually hung up on one of the poles) and the electricity reduced to 220 volts or 110 volts as needed, and several homes or buildings served from this transformer.

The lines carrying the lower voltages, 110 or 220 are known as "secondaries." They are usually short, rarely more than a few blocks long.

HIGH LOSSES WITH LOW VOLTAGE

But why not simply generate the electricity as 110 volts or at 220 volts and distribute it around without bothering about transformers? Because of the tremendous losses that would be involved in carrying the electricity at low voltages for comparatively long distances. By distributing the electricity at high voltage over the long distances and then transforming it down to the low voltage, the losses can be kept very low.

'STEP-UP' TRANSFORMERS

In fact, if the distances are greater than just around town, say to another city or another state, then the losses at 2200 volts would be prohibitive for the losses go up as the distance increases. So in long distance transmission of electricity it is stepped up and carried at very high voltages, 33,000, 66,000, 99,000 or higher, and then stepped back down at the other end of the line where it is to be used.

There will be additional explanation of this later and it will be shown why the losses are so much lower at the high voltage—also why the cost of the lines is so much less.

TRANSFORMERS DO NOT WORK WITH D.C.

It must be remembered that we are talking of alternating current only. Direct current cannot be stepped up or down by transformers as can A.C. and for that reason cannot be transmitted very far at the voltages at which it is to be used, without excessive losses.

The rate at which the electric current flows in the wire is measured in amperes, often referred to as "amps." On the same line, if one light bulb draws two amps and another one amp the first is using twice as much electricity in the same length of time, or, putting it another way, it could be used one-half the time as the second with the same amount of current.

AMPERAGE DEPENDS ON RESISTANCE AND VOLTAGE

The rate at which the current is flowing in a wire, that is, the amperage, depends on two things (1) the resistance, (2) the voltage.

1. A wire or other piece of material offers resistance to the flow of electricity through it. How much depends on the kind of material itself. If it offers very little resistance such as copper, silver, aluminum, or even water, it is said to be a "conductor."

If it offers very high resistance to the flow of electric current, so much so that scarcely any current passes through it, such as rubber, porcelain, air or dry wood, it is called an "insulator."

In between these two extremes are materials that will carry electric current but they do offer a good deal of resistance and these are sometimes used in making "resistors" which are devices intended to resist the flow of current. Such materials are usually alloys of metals such as nichrome, nickel.

RESISTANCE DEPENDS ON MATERIAL, CROSS-SECTION, AND LENGTH

The resistance of a wire depends also on its size and length. If it is a large wire it offers less resistance to the flow of a given amount of electric current than a smaller wire of the same material; in very much the same manner that a large pipe will offer less resistance to the flow of water than a small one. Obviously, the longer the wire, the greater will be its resistance.

(To Be Continued)

Oil Burner Shipments Continue to Soar

WASHINGTON, D. C.—Factory shipments of oil burners totaled 72,661 during October, 1946, to keep figures for the year soaring far above comparable periods in 1944 and 1945, the U. S. Bureau of the Census has announced.

The Bureau also reported that factory sales of mechanical stokers had decreased in October to 18,640, approximately 6% less than the 19,886 sold in September.

The number of oil burners shipped during the first 10 months of 1946 totaled 415,664, as compared with 134,043 in 1945 and 61,705 in 1944.



"Never mind the store—save my BUSH COOLER!"

Trade Name Is Changed on Flow Metering Instruments

HATBORO, Pa.—Fischer & Porter Co., manufacturer of variable area type flow metering instruments, heretofore called "Rotameters" has recently announced the adoption of the trademark name "Flowrator" to designate its products.

The firm says that it has developed the "bead-guide" metering tube and other methods of float stabilization and has abandoned the rotating float. Therefore, it adds, the old name "Rotameter" has lost all significance.

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Box 2183, Air Conditioning &
Refrigeration News

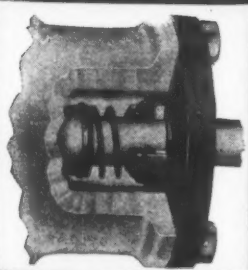
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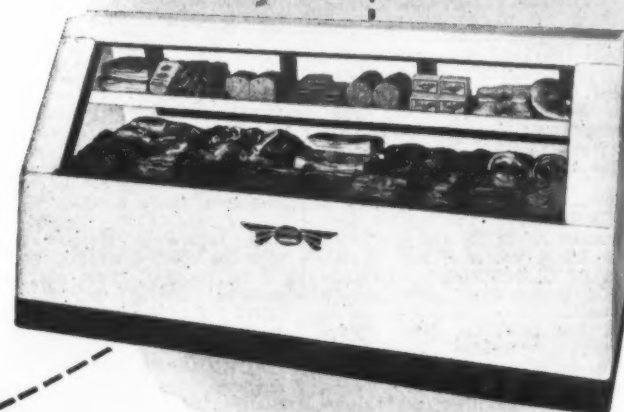


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POSITIONS WANTED

AVAILABLE JANUARY first. Experienced refrigeration executive with unusual record of achievement in national distribution for manufacturer in all phases of production of metal and wood products including purchasing, expediting, employee relations, and management control. BOX 2161, Air Conditioning & Refrigeration News.

SERVICE MAN, commercial. Servicing, maintenance, and installing multiple unit multiple temperature jobs. 4 1/2 years experience. College graduate. Age 28. U. S. born Japanese. Good reference. Now employed in New Jersey. Will consider any state. BOX 2166, Air Conditioning & Refrigeration News.

REFRIGERATION SERVICE manager wants position as sales engineer, service manager, or research and development engineer. Five years experience in servicing and installation work. Four years research and development engineer, two years as service manager. Have had sales experience. Excellent references. BOX 2176, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

OPPORTUNITY: LARGE established manufacturer of electric drinking water coolers wishes to contact men of proven ability and if possible product experience, to handle sales in Mid-West and some Eastern territories. Prefer men between ages of 30 and 40 years. BOX 2132, Air Conditioning & Refrigeration News.

WANTED: DIRECT factory representative now calling on Pacific coast refrigeration distributors, for nationally advertised quality line of open-type self-service frozen foods cabinets. Excellent opportunity, full cooperation, prompt deliveries. Write full particulars, experience, lines handled, etc., to BOX 2167, Air Conditioning & Refrigeration News.

WANTED: DIRECT factory representative now calling on refrigeration distributors in Southern states; for nationally advertised quality line of open-type self-service frozen foods cabinets. Excellent opportunity, full cooperation, prompt deliveries. Write full particulars, experience, lines handled, etc., to BOX 2168, Air Conditioning & Refrigeration News.

MANUFACTURER of low temperature, steel clad, walk-in coolers wants men of proven ability and experience to handle line in midwest and eastern seaboard. Prefer men under 40 years of age. Write full details. BOX 2170, Air Conditioning & Refrigeration News.

OPPORTUNITY FOR sales engineer with experience in air conditioning and commercial refrigeration. Unlimited advancement. All applications will be justly considered. State all education, experience, references, and expected salary in first letter. BOX 2172, Air Conditioning & Refrigeration News.

WANTED: REFRIGERATION service manager. Must be capable of managing a department and men. Pleasant character very essential. We have been in business 18 years, are the Tyler distributor for a number of counties. BOX 2177, Air Conditioning & Refrigeration News.

EQUIPMENT WANTED

WANTED: QUANTITY of 1/2 and 3/4-hp. refrigeration condensing units. ACME REFRIGERATION CO., 634 Dean St., Brooklyn, N. Y.

EQUIPMENT FOR SALE

NEW 125-cu. ft. Portable walk-in all metal. Self-contained. 2-hp. compressor, gasoline or electric. Designed for 130 outside temperature; inside—10 to 40 water defrost. 4 1/2 in. corkboard, lights. Length 105 1/2 in.; width 71 in.; height 82 in. Weather proof. Limited quantity. \$800. f.o.b. A-1 REFRIGERATION SERVICE, 735 No. Western Ave., Los Angeles 38, Calif.

ELECTRIC FANS and motors: Herman Nelson 1,800 CFM, complete with Century Electric Motors 1 1/2 hp., 60 cycle, 1 phase, 1,750 RPM. About 28 available. A & B ELECTRIC REFRIGERATION CO., Macon, Ga.

HERE'S A buy. Priced for an immediate sale. Late type upright modernistic stainless steel freezers, fluorescent 16 and 21 cu. ft. Beverage coolers, dry type. Domestic evaporators can be used for many applications. ACME REFRIGERATION CO., 634 Dean St., Brooklyn, N. Y. ST. 3-3040.

7 1/2 x 7 1/2 CREAMERY PACKAGE ammonia compressor with 20 hp., 220 volt, 3 phase, 865 RPM motor. Top shape. \$1,500. BARTON ELECTRIC & REFRIGERATION CO., Dodge City, Kan.

IMMEDIATE DELIVERY. 3-hp. Copeland water-cooled "Freon" condensing units, good up to 5 hp. on air conditioning. New and in original factory crates, complete with controls, belts, and pulleys but less motors. \$425 f.o.b. New York City, J. BLOCK, 1207 President St., Brooklyn 25, N. Y. SL 6-1579.

3 x 3 YORK CONDENSING unit complete with motor, excellent condition. Shell and tube condenser. Operating at A & P Store, 305 State St., New London, Conn. For information write BRODIE SALES & SERVICE, 49 Spring St., New Haven, Conn. Price \$400.

IMMEDIATE DELIVERY—New Air Conditioning Equipment. Weathermakers complete with motor, "Freon" coil, etc. 2 ton

to 25 ton—SWSI, DWDI, and Twin Centrifugal Blowers, Propeller Fans, Heating and Cooling Coils, Evaporative Condensers, Self-Contained Air Conditioning Units. CONTROLTEMP EQUIPMENT SALES CO., 236 Butler St., Brooklyn 17, N. Y.

NEW 1/2 COMPRESSORS, complete with Wagner new motors, less control. \$165. 25% with order, balance c.o.d. Also new reach-in boxes. DAY & NIGHT SERVICE, 923 W. Girard Ave., Philadelphia 23, Pa.

FOR SALE: 1,000 new flip covers and frame assemblies for freezers and ice cream cabinets. Two popular sizes. 1/4 to 2 hp. new and remanufactured condensing units, also new aluminum ice cube trays. EDISON COOLING CORP., 310 E. 149th St., Bronx 51, N. Y.

REFRIGERATOR DOORS, new, product of Jamison. 24 outside doors 33 1/2 x 73 1/2 x 8 six inch cork insulation metal covered two gaskets three hinges with matching batten vestibule doors. Price one outside and two vestibule doors crated \$100 f.o.b. E. M. FAIRBANKS CO., 145-03 Seventh Ave., Whitestone, L.I., N. Y.

44-CU. FT. REFRIGERATORS, immediate delivery, with blower coil—\$389.92, with ice cube maker—\$422.92. Stainless steel interior, white enamel exterior, 4 doors. Remote type, condensing unit and valves are not included. Terms S.D.B.L. 10% deposit with order. J. GEO. FISCHER & SONS, INC., Saginaw, Mich.

IMMEDIATE DELIVERY freezers open and closed glass top, stainless steel top, canopy type, 20-44 cu. ft. Florist Dairy boxes, bottle coolers, double duty display cases. Ice cream cabinets, storage boxes, wood-metal. 4-6 can milk coolers, reach-in refrigerators. Water Fountains. FRIGIDTEMP CORP., 931 Bergen St., Brooklyn 16, N. Y. MA 2-9093.

HOME AND farm freezers, dry beverage coolers, ice cream cases, open type, frozen food cases with superstructure, reach-in refrigerators, all equipment with and without units. Immediate delivery. Attractively priced, exclusive distributorships available. GENERAL REFRIGERATORS CORP., 678 Broadway, New York (12), ST 9-1222.

IMMEDIATE DELIVERY. Complete line refrigerator materials and parts including 450 tons steel, 20 cars Fiberglass, Hardware, compressors, condensers, tem-lock instruments, plexiglass, copper tubing, electric cord, etc. Can be inspected at plant or lists supplied. KELLETT AIR-CRAFT CORP., North Wales, Pa.

FOR SALE—new in stock for immediate shipment. 1,500 watt and 5,000 watt 115 volt, A.C. single phase, fully-automatic 4 cylinder water cooled Kohler plants. Complete with fuel tank, fittings, and starting battery. Ideal stand-by for food preservation. Write or wire. E. E. PAULLY & CO., Cheboygan, Mich.

COMPRESSORS AND PARTS rebuilding—Compressors, float valves, water valves, low pressure controls, evaporators, water cooled condensers, condensing units and many other items replaced from our large stocks, or repaired upon receipt of your defective material. Send for our catalogues listed. REFRIGERATION MAINTENANCE CORP., 321 E. Grand Ave., Chicago, Ill.

FLOAT REPLACEMENTS. For replacing defective high side floats on all household units. Regular charging connection, capillary tube setup, internal strainer and exact mounting plate. Part #2000—Westinghouse (4 hole plate), and #2010 (3 hole plate); Part #2020—Gibson; Part #2030—General Electric (DR-1 & DR-2); Part #2040—For general replacement (undrilled plate). \$6.75 each. SEALED UNIT PARTS CO., 3097 Third Ave., New York 56.

SEALED CROSLLEY TERMINALS. Installed from the outside in a few minutes without opening the compressor. Corrects leaky terminals on all Crosley "F-12" units. Set of three \$6.75 (Part No. 1020). Installation tool \$1.65. Immediate delivery. Money-back guarantee. SEALED UNIT PARTS CO., 3097 Third Ave., New York 56, N. Y.

FRIGIDAIRE METER-MISER Terminals. Installed from the inside. Fits compressors with bottom-mounted terminals (Part No. 1060). Set of three \$2.85. WESTINGHOUSE TERMINALS. Installed from the inside. (Part No. 1030). Set of three \$2.85. SEALED UNIT PARTS CO., 3097 Third Ave., New York 56, N. Y.

NORGE CHECK VALVES. For open-type units. (Part No. 1040). \$2.55 each. SEALED NORGE terminal, packing washers. For repairing leaky terminals. Installed from the outside in a few minutes. (Part No. 1050). Three sets (9 washers) \$1.00. SEALED UNIT PARTS CO., 3097 Third Ave., New York 56, N. Y.

SEALED NORGE terminals. Complete assembly. Replaces shorted terminals. Installed from inside. (Part No. 1100). Set of three \$2.85. Sealed Crosley terminals. Installed from inside. Part No. 1070 for SO2 models. Part No. 1080 for "F-12" models. Part No. 1090 for "F-21" models. Set of three \$2.85. SEALED UNIT PARTS CO., 3097 Third Ave., New York 56, N. Y.

UNDERBAR WORKBOARDS, cocktail stations, dry beverage coolers, and beer dispensers designed for water bath, circulating air, Temprete tanks and Penflo cooling systems, for immediate delivery, by one of the oldest bar interior equipment manufacturers in the East. SUPREME METAL FABRICATORS, INC., 27 Rodney St., Brooklyn 11, N. Y.

PRE-INVENTORY SALE on latest models under bar type dry beverage coolers 6 and 8 ft. lengths. Can supply same with or without units at extremely low prices while they last. Write for prices and descriptive circulars. WEST PICO APPLIANCE CO., 5812 West Pico Blvd., Los Angeles 35, Calif.

SECTIONAL WALK-IN coolers made of plastic plywood 4 in. and 6 in. of Fiberglass insulation. 8 ft. x 8 ft. x 7 ft. high. Write for prices and literature. ZERO REFRIGERATION CO., Saukville, Wis.

IMMEDIATE DELIVERY. New automatic electric ice cube maker. Will make approximately 2,000 ice cubes per day. Post-war invention. Has water-cooled sealed condensing unit complete. Beautiful stainless steel finish. For further information write BOX 2164, Air Conditioning & Refrigeration News.

CUSTOM BUILT—10% cu. ft.—low temperature test cabinet (to minus 70° F.) 1-hp. two stage "Freon" unit self-contained-counter-balanced—lift tops. Used in instrument testing short time. BOX 2169, Air Conditioning & Refrigeration News.

FRANCHISES AVAILABLE

NYC MANUFACTURER has exclusive territory available for several select dealers who are capable of representing a quality line of sliding glass top display cabinets. Complete compressor and motor. Immediate shipments! FLEISCHMAN FREEZER CO., 275 East 140th St., Bronx 51, N. Y.

BUSINESS OPPORTUNITIES

COMMERCIAL REFRIGERATION and appliance business, valuable franchises in five counties, owner working along, gross \$80,000 in sales this year. Have small store and flat, main street, beautiful growing resort town, northern Michigan. Approximate \$6,000 inventory. Building, franchises, good will, \$15,000 cash. Inventory can be financed. BOX 2171, Air Conditioning & Refrigeration News.

COMMERCIAL AND domestic sales and service, also heating. Only one in city of 4,500 population in heart of the Red River Valley, No. Dakota. 4 1/2 years lease on building, living quarters over store. Well established, doing nice business. \$10,000 will handle. BOX 2173, Air Conditioning & Refrigeration News.

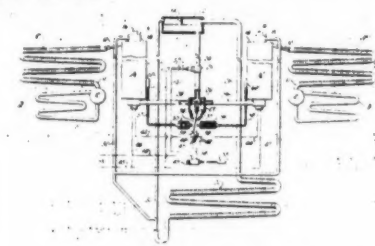
FOR SALE: Established manufacturer in the East; commercial refrigerators and freezers; national distributorship. 1946 profits \$42,000. Selling due to ill health. Will stay and supervise for as long as health permits or wanted. BOX 2178, Air Conditioning & Refrigeration News.

PATENTS

Week of Oct. 29

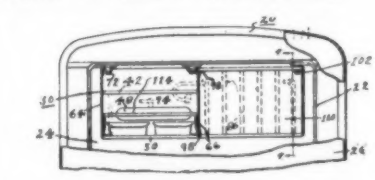
(Continued)

2,410,342. REFRIGERATION. Alfred G. Gross, Wilmette, Ill., assignor to The Hoover Co., North Canton, Ohio, a corporation of Ohio. Application Nov. 16, 1942, Serial No. 465,686. 8 Claims. (Cl. 62-5.)



1. Refrigerating apparatus including a pair of intermittent refrigerating systems each including an absorber-generator, a condenser and an evaporator connected in circuit, said condensers and said evaporators being arranged with respect to each other and to said absorber-generators to prevent gravity flow of liquid refrigerant into said absorber-generators, a cooling system for said absorber-generators including a heat rejecting part, a heat absorbing part in heat exchange with each absorber-generator, a gas and liquid separating chamber, means for conveying condensate from said separating chamber to each absorber-generator, a vapor lift pump for conveying condensate from said heat rejecting part to said separating chamber, means for conveying vapor from said separating chamber to said heat rejecting part, means for conveying vapor from each of said heat absorbing parts to said vapor lift pump, means for heating said absorber-generators, and control means arranged to govern said heating means and said cooling system to apply heat to one absorber-generator to cool the other absorber-generator.

2,410,360. REFRIGERATING APPARATUS. Lawrence A. Philipp, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application Jan. 25, 1945, Serial No. 574,479. 8 Claims. (Cl. 62-126.)

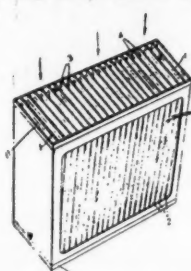


1. A refrigerant evaporating unit comprising a C-shaped section having a single refrigerant flow passage and a second C-shaped section having a plurality of parallel passages and a single refrigerant flow passage communicating at one end with said parallel passages and at the other end with said first mentioned single refrigerant flow passage.

2,410,371. FILTER. Cecil Gordon Vokes, London, England. Application March 15, 1944, Serial No. 526,574. In Great Britain Feb. 8, 1943. 6 Claims. (Cl. 133-71.)

1. A filter element formed of filtering material folded to include alternating top and bottom sections of shape roughly triangular or wedge shaped, the top sec-

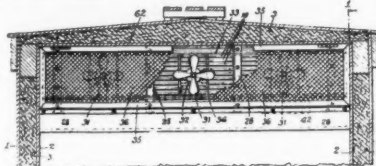
tions tapering in one direction and the bottom sections tapering in the opposite direction, and side wall sections lying between the top and bottom sections and



having their edges joined in the front and back at the apexes of the triangular top and bottom sections.

Week of Nov. 5

2,410,449. REFRIGERATOR CAR. Herman W. Kleist, Chicago, Ill. Application April 7, 1943, Serial No. 482,097. 15 Claims. (Cl. 62-102.)



2. A refrigerator car comprising a car body having a ceiling, a plurality of vacuum plates arranged in the interior of the car near the ceiling and separated by spacers, an expansion valve associated with said vacuum plates, means for supplying a refrigerant to said expansion valve, a series of connections from said expansion valve to said vacuum plates, one for each plate, an air-moving device at one end of said plurality of vacuum plates moving the cooled air through the spaces between the vacuum plate for discharge into the interior of the car, a return pipe leading from said vacuum plates to the refrigerant source, a controlling bulb in said return pipe connected with said expansion valve for closing the expansion valve when the temperature reaches a predetermined low point.

2,410,648. SHELF OR RACK FOR REFRIGERATORS, OVENS, AND THE LIKE. William Friege, Detroit, Mich., assignor to L. A. Young Spring & Wire Corp., Detroit, Mich., a corporation of Michigan. Application Aug. 4, 1945, Serial No. 608,916. 6 Claims. (Cl. 211-153.)

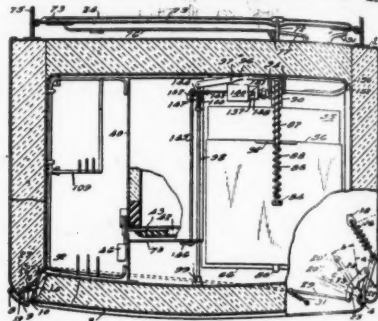


3. In a shelf or rack, the combination of a border frame comprising side members, a front frame member of channel shape in cross section and having a lower arm and a rearwardly facing channel and having its lower arm welded to the front ends of said side members, grid members welded to the lower arm of said front frame member, and a front trim member having a depending portion concealing said front frame member and a forwardly projecting concealed flange at its rear edge engaged in the channel of said front frame member, the lower arm of said front frame member being upset at a plurality of longitudinally spaced points into indenting engagement with the flange of said front trim member.

2,410,672. REFRIGERATOR. Glenn Mufly, Springfield, Ohio. Application Oct. 3, 1941, Serial No. 413,495. 14 Claims. (Cl. 312-192.)

4. A cabinet, a door for said cabinet,

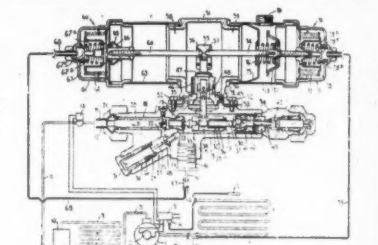
mechanical means for swinging said door in either direction, power means for actuating said mechanical means, and



manually actuated means located clear of the swing of said door for controlling the action of the first two said means.

2,410,795. EXPANSION VALVE. Earnest J. Dillman, Detroit, Mich., assignor to Detroit Lubricator Co., Detroit, Mich., a corporation of Michigan. Application Feb. 5, 1944, Serial No. 521,233. 7 Claims. (Cl. 62-9.)

1. The combination with a refrigerant evaporator of a refrigerant expansion valve for controlling flow of a refrigerant medium to the evaporator and comprising an elongated tubular open ended casing having one end open for admission of refrigerant medium, a valve seat member in the bore of said casing, a valve member cooperable with said seat member and guided for longitudinal movement in said bore, said casing having an outlet passageway through the side wall of said bore on the outlet side of said valve seat member, said casing having a passageway bypassing said seat member, an orifice member determining the minimum flow to said outlet and positioned in and restricting flow through said bypass passageway, a needle valve cooperable with said orifice member to throttle the flow through the orifice in said orifice member, said casing having a side wall opening positioned at the side of said valve member, a motion transmitting member connected to and for actuating said valve member and extending through said opening, means sealing said opening around said transmitting member, a housing mounted on said casing and surrounding the exterior end portion of said



transmitting member, a fluid charged thermostatic actuator carried by said housing and having a bulb element responsive to temperature of the refrigerant medium adjacent the inlet to the evaporator, a rod connecting said actuator to said transmitting member to move said valve member toward closed position upon temperature increase of said bulb element, a fluid charged thermostatic actuator carried by said housing in opposing relation to said first-named actuator and having a bulb element responsive to temperature of the refrigerant medium adjacent the outlet of the evaporator, a rod connecting said second-named actuator to said transmitting member to move said valve member toward open position upon temperature increase of said second-named bulb element, a superheat determining spring opposing opening of said valve member by said second-named actuator, and means closing the other open end of said casing and determining the maximum opening of said valve member in its operating range.

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12/30/46

There's More to Replacing a Compressor Shaft Seal Than Pulling One Off and Slipping Another On

Serviceman Should Understand Conditions That Make for Best Operation of Seals

CLEVELAND—"If you are replacing a shaft seal that has failed, don't just simply put on a new seal, but also try to correct the faults in the refrigeration system that may have caused the seal failure," advised Willis Stafford of Chicago Seal Co. in a talk on "Developments in Shaft Sealing" presented before the annual convention of the Refrigeration Service Engineers Society.

"And when you're installing a seal be sure to read the instruction sheet," he advised. "Maybe you've installed the same seal before, but if you don't do it every day, you'd better read it again. It's just possible that some changes in the seal may have been made by the manufacturer since you last installed one."

REMOVE ALL OLD PARTS

"Also be sure that you remove all the old seal parts when making replacements, and it's advisable to clean up the shaft and stuffing box. When ordering seals, it is important to obtain the right seal," he continued, "for many have been improperly ordered from the manufacturer."

The compressor model will usually help in identifying the type of seal, but if the compressor is an "unknown," the following six dimensions are required to make an exact replacement:

1. Shaft diameter.
2. Width of journal bearing.
3. Diameter of stuffing box.
4. Depth of stuffing box.
5. Number of bolt holes, size of holes, and diameter of bolt hole circle.
6. Distance from the compressor housing face to the inside hub of the flywheel.

In discussing the development of

shaft seals, Mr. Stafford outlined the several requirements which a seal must meet. A seal must be able to withstand a wide range of pressures. It must prevent leakage of refrigerant, even though some refrigerants are especially hard to hold. When the interior of the compressor is at pressures below atmospheric, the seal must prevent the intake of air. And, last of all, the seal must be compact, for little space is allowed for it.

TYPES OF SEALS

Several different types of seals have been used in refrigerating machines, such as the packing gland type employed in the older ammonia compressors, he said. The original tallow-impregnated rope seal has been improved, but the chief disadvantage of this type is the problem of keeping a constant pressure on the packing gland, according to Mr. Stafford.

"Spring-loaded" flanges with the packing gland seal helps keep the required tension, but this type still requires a lot of attention for satisfactory performance, he declared.

The next seal developed, and a type employed by one of the earliest manufacturers of refrigeration compressors was the labyrinth seal. It consisted of numerous steel discs with bronze rings in between, all being packed in graphite. This seal did hold the refrigerant in check to a certain extent, he said.

The third type of seal, which is somewhat out of the picture today, was the diaphragm seal, consisting of a flat, flexing disc with a nose contacting the shaft shoulder. This type required pressure at the opposite end of the shaft, but it did reduce the amount of overhang needed on the shaft, explained Mr. Stafford.

"The labyrinth seal had a good life, but it was limited in travel for flexing by the end play of the shaft."

Widely used, the bellows type seal represents the fourth general class of shaft seal, and in principle it is similar to the packing box with bellows taking the place of packing.

"The first bellows type seals were largely several diaphragms connected together to allow increased flexing ability," Mr. Stafford said.

TWO BELLWS TYPES

Two separate classes of bellows type seals are employed—inside bellows and outside bellows. The inside bellows type is secured to the compressor housing by a retainer plate with the bellows, the seal nose generally remaining stationary. One chief advantage of this type is that the seal can run in a bath of oil, and a well lubricated seal gives long life, he commented.

Outside bellows type seals are mounted outside the compressor and are fastened to the shaft by a lock nut. They revolve with the shaft.

"This type of seal is a little more difficult to lubricate, but it will dissipate the heat of friction much faster than the inside bellows type, which is a direct advantage," declared Mr. Stafford.

Rotating seals on both inside and outside applications are nowadays sealed to the shaft by means of synthetic cup rings, he added.

Other types of seals including the sleeve-lock and spring-loaded shaft types were mentioned in the discussion, and Mr. Stafford touched upon the importance of considering the pressures, both interior and exterior, which will be exerted on the seal when the seal is being designed.

SPECIAL REQUIREMENTS

Proper lubrication of seals is another important design problem, and he emphasized that as speeds of compressors increase, the lubrication problem becomes greater.

"One of the greatest requirements of seals, however, is that the surfaces be flat. A flat surface is, of course, necessary to prevent refrigerant leaks, and also important is the fact that a wide flat surface helps dissipate the heat of friction."

"Nearly flat surfaces will work, but 'absolutely flat' surfaces will work better. The best-known method of getting surfaces flat is by hand lapping, and a fairly decent job can be done this way. Hand lapping,

however, is not enough today. Instead we use lapping machines. But even with lapping machines there is the problem of determining when the surface is flat. One method is to use an 'optical flat.'"

An optical flat, he explained, is a piece of glass which has been ground absolutely flat. To test a seal for flatness, the optical flat is placed on the seal and a monochromatic light reflected on the glass. This type of light filters out all but the red light bands which show up as lines about one-millionth of an inch apart. If these lines are straight, the seal surface is flat

within a millionth of an inch, he said.

The materials used in a seal must also be dissimilar, pointed out Mr. Stafford. One surface should be hardened for wearing, the other should be soft for lubrication. The hard steel or cast iron seal surface has also been strain-relieved to maintain the flat surface. The soft surface is usually bronze with a sponge-like surface to hold oil.

"One of the problems here is metal pickup, generally caused by too much heat being created in the seal. The lead in the bronze may separate out under excessive heat and deposit on the seal surface, thus it is important to keep the temperature of the seal down," he advised.

High temperatures are likewise not good for the synthetic rubber employed in modern seals, added Mr. Stafford.

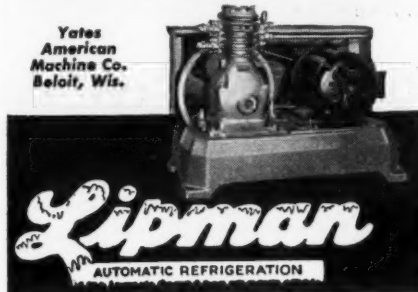
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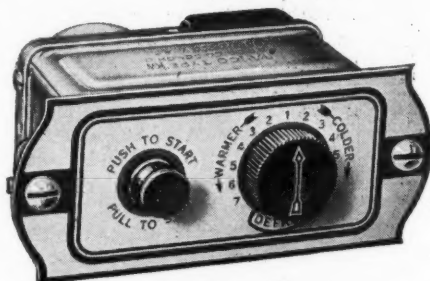
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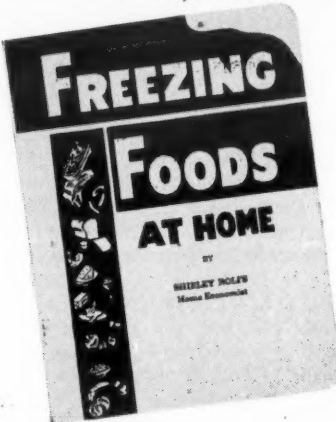
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stry Expects Good Year--

(Concluded from Page 1, Column 5) midsummer, 1947. However, they feel that "off brand" merchandise will feel the effects more than the "better lines."

The National Electrical Manufacturers Association expressed the opinion that appliance volume would be heavy throughout most of the coming year, especially on refrigerators, ranges, water heaters, washers, dishwashers, and ironers. That is, NEMA says, if the industry is not hit by another round of strikes.

Whether or not that "round of strikes" materializes, will probably depend on the outcome of the wage demands that the appliance manufacturers expect to get before 1947 is out of swaddling clothes.

UNION BOARDS TO MEET

CIO union conference boards of Westinghouse, General Electric, the electrical division of General Motors, and Sylvania Electric Co., representing 225,000 workers, are scheduled to meet in New York City on Jan. 4 and 5 to notify those companies that wage and contract negotiations will be opened either in late January or early February.

"We definitely approve the Nathan report, which says that wages can be increased 25% without raising prices or lowering profits much below wartime peaks," Organizational Director James J. Matles of New York City, has declared.

These conference boards will also submit contract proposals to their companies on insurance, health and retirement plans, holidays with pay, guaranteed annual pay, and other contract improvements, according to union officials.

DOWN PAYMENT WAGE BOOSTS

Wage increases of 8 to 12 cents per hour that were recently granted by 15 smaller companies will be considered as down payments on wage increases to be negotiated with those companies in March, according to Mr. Matles.

Aside from wage demands Nema predicted that production during the first half of next year will be affected by a shortage of steel sheets, due to the coal and other strikes of the past year.

It added that copper shortages will also be serious. Plastics and synthetics for covering wire will be short, too.

Some manufacturers expressed concern over the present unbalanced inventories they are carrying.

Roy C. Ingersoll, a Borg-Warner Corp. vice president, explained that in plants manufacturing washing machines, the company had far more screws and other small parts than it needed. However, compared to other far more costly items such as tubs and motors, the total dollar value of too plentiful materials is almost infinitesimal, he added.

Westinghouse Electric Corp. has suffered from a shortage of shipping boxes for its appliances, but expects improvements in the near future.

General Electric Co. reported that

it had virtually no supplies of steel, pig iron, copper, lead, zinc, aluminum, cotton, and paint. It is rather pessimistic about improvements in the situation in the immediate future.

The National Association of Purchasing Agents has conducted an opinion survey among its members on the business future and came up with a report covering sales inventories that says, in part:

"More merchandise is being received. However, an unbalanced condition continues. Raw materials inventories have not increased proportionately with supply items that are finished products.

"Buyers, however, are trying to reduce and balance inventories. Stocks are being combed to reduce wherever possible. Many unfilled orders of long standing are being canceled.

"The inventory question becomes increasingly important as we pass from a period in which it was impossible to build up inventories because of shortages of materials, into a period where at one and the same time the possibility of building inventories and the danger because of the price situation must both be considered."

NEMA TO ATTACK EXCISE TAX

Nema has announced that it is going to tackle Congress in 1947 and press for the elimination of the present excise taxes on electric household appliances.

The organization stated that the present war-inspired excise taxes of 10% on sales of electric household appliances at the manufacturer's level will serve as a serious deterrent to the growth of the sales of such appliances if continued.

How the electric light and power industry is helping to set the stage for the expected increased use of appliances was described in a year-end report issued by Grover C. Neff, president of the Edison Electric Institute.

Mr. Neff pointed out that in a nation of 40,000,000 families, 90% are now using electrical service. He explained that 900,000 new customers were added to electric utility rolls in 1946, and another 600,000 farms are expected to be wired during the next two years.

Conklin Named Admiral Northwest Sales Head

CHICAGO—Harold D. Conklin, for the past two years manager of Admiral Corp.'s appliance division here, has been appointed northwest sales manager for all Admiral products, W. C. Johnson, sales manager for Admiral Corp., has announced. Mr. Conklin will make his headquarters in San Francisco.

Prior to his connection with Admiral, Mr. Conklin managed the range and water heater division of Edison General Electric Appliance Co. and was West Coast regional manager.

'Rebuilt' Advertising--

(Concluded from Page 1, Column 4)

pliances shall appear in all advertisements. In such cases where the actual year of manufacture is not available, the year in which this particular model was discontinued by the manufacturer shall be stated.

6. If a guarantee is advertised, the terms of the guarantee shall be set forth in the advertisement, and shall include the words "written guarantee." A written copy of such guarantee shall be supplied with each machine sold.

7. If a used and rebuilt appliance is sold only with attachments, the price, if advertised, shall include both the machine and the attachments.

8. When the attachments are included at a featured price, only those attachments available at such price shall be illustrated. If additional attachments are advertised at a higher price, they shall be listed and priced separately.

9. If any illustration is used in connection with a price, it must accurately illustrate the merchandise available at the advertised price, unless the illustrated model sells at a higher price, in which case the higher price shall be prominently shown in direct proximity to the illustration with some identifying phraseology, i.e. "model illustrated, \$100," etc.

In noting the special reference to vacuum cleaners in the agreement, the Vacuum Cleaner Manufacturers Association acknowledged that nowhere else in the appliance field have advertising abuses reached the extremes practiced in the retail household vacuum cleaner field.

The Association reports that it has already secured the aid of the Federal Trade Commission.

Caution Packers--

(Concluded from Page 1, Column 3)

Mr. Martin said that "with the vast increase in production of most processed food, there is every indication that a highly competitive situation is developing.

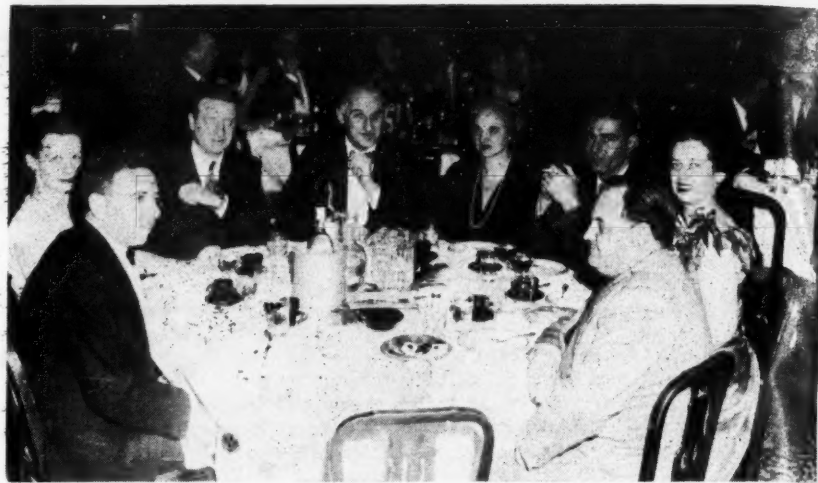
"In recent years the packers' problem has been primarily one of production—but in the near future the problem will be one of selling."

Mr. Martin said, however, he believed the frozen foods industry will "grow and prosper in future years," but warned that expansion must be based on sound business principles.

One way to avert disaster in the frozen foods industry, he asserted, is to insist on high quality. "Some new packers are putting out inferior goods," he declared. "Remember, if Mrs. Housewife buys one bad product she will condemn the whole industry."

Clarence Francis, chairman of the General Foods Corp., said "we are in a boom, but we need have no bust if we keep our heads—and use them." Purchasing power can be sustained "if labor and management forget their quarrel about future profits and make a sound bargain on the basis of production," he added.

ASRE Holds Its Annual Dinner-Dance



Privileged to sit at the president's table for the annual ASRE dinner-dance in New York recently were (left to right) Mr. & Mrs. Dan Wile of Carrier Corp.; Edward Simons, consulting engineer; President Charles S. Leopold; Mrs. Simons; George M. Kingsland, Minneapolis-Honeywell; Mrs. Leopold; and Arthur Hess, of Hess-Greiner & Pollard.

C. E. Scott Is Appointed Rittling Vice President

BUFFALO—C. E. Scott has been appointed vice president in charge of sales and advertising of the Rittling Corp., according to Charles P. Rittling, president.

Mr. Scott has served in executive capacities with York Heating & Ventilating Corp., Philadelphia, and Warren Webster & Co., Camden, N. J.

He joined Fedders Quigan Corp. in 1941. Mr. Scott is a past president of the Industrial Unit Heater Association.

Detroit ASRE to Hear 2 Talks on Tubing

DETROIT—Two talks on tubing—copper and steel—will be presented at the next meeting of the Detroit Section, American Society of Refrigerating Engineers to be held Monday, Jan. 6 at 7:45 p.m. in the Rackham Foundation here.

Paul Domke of Mueller Brass will discuss the "Manufacture of Copper Pipe" and Arthur F. Bernthal of Bundy Tubing Co. will describe the "Manufacture of Bundyweld" Steel Tubing." Henry O. Kirkpatrick will be chairman for the evening.

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